

**CONTRACT DOCUMENTS AND SPECIFICATIONS
FOR
HELENA LANDFILL GROUNDWATER EXTRACTION SYSTEM
CITY OF HELENA PROJECT NO. 99-15**



City of Helena
Department of Public Works

SEPTEMBER 1999

DRAFT

Prepared for:

City of Helena
316 North Park Avenue
Helena, MT 59623

Prepared by:

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September 10, 1999

Jeff Towery
Acting Public Works Director
City of Helena
316 North Park Ave.
Helena, MT 59623

RE: Bid Package for Groundwater Extraction System

Dear Jeff,

Enclosed for your review, please find our report entitled "Helena Landfill Groundwater Extraction System." Major changes to this document should be submitted to me immediately. A complete review containing minor revisions should be submitted to be by 12:00 p.m. Monday, September 13, 1999. The Invitation to Bid for this project is scheduled for public notice on September 12 and 19, 1999. If you have any questions concerning this document or associated issues, please let me know.

Sincerely,

Jodi Bingham, E.I.
Environmental Engineer/Chemist

RECEIVED

SEP 10 1999

MONTANA
DEPT. OF ENVIRONMENTAL QUALITY
COMMUNITY SERVICES BUREAU

Enclosure

- c: Dennis Taylor, City Manager, with enclosure
Randy Lilje, Parks Director, with enclosure
Pat Crowley, MDEQ, with enclosure
Larry Kurkahowa, Bill Roberts Golf Course, with enclosure

**CONTRACT DOCUMENTS AND SPECIFICATIONS
FOR
HELENA LANDFILL GROUNDWATER
EXTRACTION SYSTEM**

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MONTANA

DEPT. OF ENVIRONMENTAL QUALITY
COMMUNITY SERVICES BUREAU

SEPTEMBER 1999

Prepared for:

City of Helena
316 North Park Avenue
Helena, MT 59623

I hereby certify that the Project Drawings and the Project Manual were prepared by me or under my direct supervision and that I am a duly registered Engineer under the laws of the State of Montana.

Michael R. Wignot, 9954 PE (MT)

Prepared by:

Hydrometrics, Inc.
2727 Airport Road
Helena, MT 59601
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SECTION 0000 INVITATION TO BID

Sealed bids for the replacement of Morris County Gas Distribution System will be received in the office of Clerk of the County, County of Morris, 500 High Park Avenue, Newark, Missouri until 2:00 p.m. on August 12, 1999.

Installation of a natural gas distribution system consisting of approximately 1000 feet of 12 inch diameter, low pressure, natural gas distribution pipe with 1000 feet of 12 inch diameter, low pressure, natural gas distribution pipe, 20 inch PSC pipe, 1000 feet of 12 inch diameter, low pressure, natural gas distribution pipe, and 1000 feet of 12 inch diameter, low pressure, natural gas distribution pipe.

The contract documents for the replacement of Morris County Gas Distribution System will be available for review in the office of the Engineer, 500 High Park Avenue, Newark, Missouri, from 8:00 a.m. to 5:00 p.m. on August 12, 1999.

There will be a Pre-Bid Conference at the project site, 500 High Park Avenue, Newark, Missouri, at 8:00 a.m. on August 12, 1999. Interested CONTRACTORS are encouraged to attend.

Contract documents and plans for the replacement of Morris County Gas Distribution System will be available for review in the office of the Engineer, 500 High Park Avenue, Newark, Missouri, from 8:00 a.m. to 5:00 p.m. on August 12, 1999. Plans for the replacement of Morris County Gas Distribution System will be available for review in the office of the Engineer, 500 High Park Avenue, Newark, Missouri, from 8:00 a.m. to 5:00 p.m. on August 12, 1999.

SECTION 1.0

INFORMATION TO BIDDERS

SECTION 00020 - INVITATION TO BID

SECTION 00100 - INSTRUCTIONS TO BIDDERS

SECTION 00020 INVITATION TO BID

Separate sealed bids for construction of Helena Landfill Gas Extraction System will be received at the office of Clerk of the Commission, City of Helena, 316 North Park Avenue, Helena, Montana until 2:00 p.m. local time on September 17, 1999.

Installation of a passive gas extraction system consisting of approximately 1275 lineal feet of trench excavation, haul excess material, installation of 6-inch slotted ADS corrugated polyethylene, horizontal extraction pipe, 20 mil PVC liner, gravel backfill, top cap backfill and compaction, and construction of vent house with roof.

The contract documents consisting of Drawings and Project Manual may be examined or obtained at the office of Mike Wignot (ext. 124) or Dan Tiefenthaler (ext. 174), Hydrometrics, Inc., 2727 Airport Road, Helena, MT 59601 (phone: (406)443-4150).

There will be a Pre-Bid Conference at the project site near Carroll College, Helena, Montana at 2:00 p.m., September 9, 1999. Interested CONTRACTORS are encouraged to attend.

CONTRACTORS and any of the CONTRACTOR's subcontractors doing work on this project will be required to obtain registration with the Montana Department of Labor and Industry (DLI). Forms for registration are available from the Department of Labor and Industry, P.O. Box 8011, 1805 Prospect, Helena, Montana 59604-8011. Information on registration can be obtained by calling 1-800-556-6694. CONTRACTORS are required to have registered with the DLI prior to bidding on this project.

The CONTRACTOR must ensure that employees and applicants for employment are not discriminated against because of their race, color, religion, sex or national origin.

A bid bond will not be required for this project. Successful BIDDERS shall furnish an approved Performance Bond and a Labor and Materials Payment Bond, each in the amount of one hundred percent (100%) of the contract amount. Insurance as required shall be provided by the successful BIDDER(s) and a certificate(s) of that insurance shall be provided.

The contractor will provide with this bid a work schedule that must be approved by the owner prior to bid acceptance.

No bid may be withdrawn within a period of 60 days after the date bids are opened.

The right is reserved to reject any or all proposals received, to waive informalities, to postpone the award of the contract for a period of not to exceed sixty (60) days, and to accept the lowest responsive and responsible bid which is in the best interest of the OWNER.

The CONTRACTOR must ensure that personnel who will perform labor, excavation, or equipment operation during site remediation have completed a certified 40 hour Hazmat safety training course and are current on all applicable annual safety training.

The CONTRACTOR will be responsible to obtain the necessary permits from the City of Helena for this construction.

SECTION 00100

INSTRUCTIONS TO BIDDERS

1.0 DEFINED TERMS

Terms used in these Instructions to BIDDERS which are defined in the Standard General Conditions of the Construction Contract (No. 1910-8) included in this Project Manual have the meanings assigned to them in the General Conditions. The term "BIDDER" means one who submits a Bid directly to OWNER, as distinct from a sub-bidder, who submits a bid to a BIDDER. The term "Successful Bidder" means the lowest, qualified, responsible and responsive BIDDER to whom OWNER (on the basis of OWNER's evaluation as hereinafter provided) makes an award. The term "Bidding Documents" includes the Invitation to Bid, Instructions to Bidders, the Bid Form, Bond Forms, the proposed Agreement and the Proposed Contract Documents (including all Addenda issued prior to receipt of Bids).

2.0 COPIES OF BIDDING DOCUMENTS

2.1 Complete sets of the Bidding Documents in the number stated in the Invitation to Bid may be obtained from Dan Tiefenthaler (ext. 174) or Mike Wignot (ext. 124) at Hydrometrics, Inc., 2727 Airport Road, Helena, MT 59601 (phone: 406-443-4150).

2.2 Complete sets of Bidding Documents must be used in preparing Bids; neither OWNER nor ENGINEER assume any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

2.3 OWNER and ENGINEER in making copies of Bidding Documents available on the above terms do so only for the purpose of obtaining Bids on the Work and do not confer a license or grant for any other use.

3.0 QUALIFICATION OF BIDDERS

3.1 To demonstrate qualifications to perform the Work, each BIDDER must be prepared to submit within five (5) days of OWNER's request written evidence, such as financial data, previous experience in performing comparable work, business and technical organization, present commitments and other such data. Each Bid must contain evidence of BIDDER's qualification to do business in the state where the Project is located or covenant to obtain such qualification prior to award of the contract. No BIDDER will be acceptable if he is engaged in any other work which impairs his ability of meeting all requirements herein stipulated.

In determining the lowest responsible bid, the following elements will be considered: whether the BIDDER involved (a) maintains a permanent place of business; (b) has adequate plant and equipment to do the work properly and expeditiously; (c) has a suitable financial status to meet obligations incident to the work; and (d) has appropriate technical experience.

Each BIDDER may be required to show that former work performed by him has been handled in such a manner that there are no just or proper claims pending against such work. No BIDDER will be acceptable if he is engaged on any other work which impairs his ability to finance his contract. The BIDDER shall demonstrate his ability by meeting all requirements herein stipulated, if asked for them.

As part of the bid submittal, the Contractor shall submit a discussion and references of at least three (3) projects the Contractor or their staff have completed involving methane extraction systems.

4.0 EXAMINATION OF CONTRACT DOCUMENTS AND SITE

4.1 It is the responsibility of each BIDDER to (a) examine the Contract Documents thoroughly, (b) visit the site to become familiar with local conditions that may affect cost, progress, performance or furnishing of the Work, including but not limited to those general and local conditions affecting transportation, disposal, handling and storage facilities, availability of labor, water, power, roads, climatic conditions and seasons, physical conditions at the work sites and project area as a whole, job site topography and ground conditions, equipment and facilities needed preliminary to and during work prosecution, (c) consider federal, state and local Laws and Regulations that may in any manner affect cost, progress, performance or furnishing of the Work, (d) study and carefully correlate BIDDER's observations with the Contract Documents, and (e) notify OWNER of all conflicts, errors or discrepancies in the Contract Documents.

4.2 Any BIDDER may, upon request, examine those reports of investigations and tests of subsurface and latent physical conditions at the site (if any) which have been relied upon in preparing the drawings and specifications. These reports are not guaranteed as to accuracy or completeness, nor are they part of the Contract Documents.

Copies of such reports and drawings will be made available for review at the office of ENGINEER. Those reports and drawings are not part of the Contract Documents. It is emphasized that such reports and drawings were prepared to evaluate the site and physical features for the purpose of this project design and not for the purpose of evaluating construction related considerations. The BIDDER is solely responsible for any interpretation, evaluation or conclusions drawn from such reports or drawings relating to the costs, methods, equipment requirements, dewatering, shoring or bracing, trench or slope stabilities, or any other construction or safety related item.

4.3 Information and data reflected in the Contract Documents with respect to Underground Facilities at or contiguous to the site is based upon information and data furnished to OWNER and ENGINEER by owners of such Underground Facilities or others. OWNER and ENGINEER do not assume responsibility for the accuracy or completeness thereof unless it is expressly provided otherwise in the Supplementary Conditions.

4.4 Provisions concerning responsibilities for the adequacy of data furnished to prospective BIDDERS on subsurface conditions, Underground Facilities and other physical conditions, and possible changes in the Contract Documents due to differing conditions appear in Paragraphs 4.2 and 4.3 of the General Conditions.

4.5 Before submitting a Bid, each BIDDER will, at BIDDER's own expense, make or obtain any additional examinations, investigations, explorations, tests and studies and obtain any additional information and data which pertain to the physical conditions (surface, subsurface and Underground Facilities) at or contiguous to the site or otherwise which may affect cost, progress, performance or furnishing of the Work and which BIDDER deems necessary to determine its Bid for performing and furnishing the Work in accordance with the time, price and other terms and conditions of the Contract Documents.

4.6 Upon request in advance, OWNER will provide each BIDDER access to the site to conduct such explorations and tests as each BIDDER deems necessary for submission of a Bid. BIDDER shall fill and compact all holes, clean up, and restore the site to its former condition upon completion of such explorations. Any administrative requirements and associated costs of such investigations are the responsibility of the BIDDER.

4.7 The lands upon which the Work is to be performed, rights-of-way and easements for access thereto and other lands designated for use by CONTRACTOR in performing the Work are identified in the Contract Documents. All additional lands and access thereto required for temporary construction facilities or storage of materials and equipment are to be provided by CONTRACTOR. Easements for permanent structures or permanent changes in existing structures are to be obtained and paid for by OWNER unless otherwise provided in the Contract Documents.

4.8 The submission of a Bid will constitute an incontrovertible representation by BIDDER that BIDDER has complied with every requirement of this Article 4, that without exception the Bid is premised upon performing and furnishing the Work required by the Contract Documents and such means, methods, techniques, sequences or procedures of construction as may be indicated in or required by the Contract Documents, and that the Contract Documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

5.0 INTERPRETATIONS AND ADDENDA

5.1 All questions about the meaning or intent of the Contract Documents are to be submitted to ENGINEER in writing. Interpretations or clarifications considered necessary by ENGINEER in response to such questions will be issued by Addenda mailed or delivered to all parties recorded by ENGINEER as having received the Bidding Documents. Questions received less than ten (10) days prior to the date for opening of Bids may not be answered. Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

5.2 Addenda may also be issued to modify the Bidding Documents as deemed advisable by OWNER or ENGINEER.

5.3 Any addenda issued during the time of bidding, or forming a part of the Contract Documents loaned to the BIDDER for the preparation of his proposal, shall be covered in the Bid and shall be made a part of the Agreement. Receipt of each addendum shall be acknowledged in the Bid. Any Bid in which all issued addenda are not acknowledged will be considered incomplete and will not be read.

6.0 BID SECURITY

6.1 Each Bid shall be accompanied by Bid Security made payable to OWNER in an amount of ten percent (10%) of the BIDDER's maximum Bid price and in the form of cash, a cashier's check, certified check, bank money order, or bank draft, in any case drawn and issued by a national banking association located in Montana or by any banking corporation incorporated under the laws of Montana; or a Bid Bond (on form attached if a form is prescribed) issued by a surety authorized to do business in Montana meeting the requirements of Paragraph 5.1 of the General Conditions. Bid Bonds shall be countersigned by a Resident Montana Agent.

6.2 The Bid Security of the Successful BIDDER will be retained until such BIDDER has executed the Agreement and furnished the required contract security, whereupon the Bid security will be returned. If the Successful BIDDER fails to execute and deliver the Agreement and furnish the required contract security within fifteen (15) days of the Notice of Award, OWNER may annul the Notice of Award and the Bid Security of that BIDDER will be forfeited. Award may then be made to the next lowest responsible and qualified BIDDER or may be readvertised, as the OWNER may decide. The Bid Security of other BIDDERS whom OWNER believes to have a reasonable chance of receiving the award may be retained by OWNER until the earlier of the seventh day after the Effective Date of the Agreement or the sixty-first day after the Bid opening, whereupon Bid Security furnished by such BIDDERS will be returned. Bid Security with Bids which are not competitive may be returned within seven (7) days after the Bid opening.

7.0 CONTRACT TIME

7.1 The numbers of days within which, or the dates by which, the Work is to be substantially completed and also completed and ready for final payment (the Contract Time) are set forth in the Bid Form and the Agreement.

8.0 LIQUIDATED DAMAGES

8.1 Provisions for liquidated damages, if any are set forth in Section 00500, Agreement.

9.0 SUBSTITUTE OR "OR-EQUAL" ITEMS

9.1 The Contract, if awarded, will be on the basis of materials and equipment described in the Drawings or specified in the Specifications without consideration of possible substitute or "or-equal" items. Whenever it is indicated in the Drawings or specified in the Specifications that a substitute or "or-equal" item of material or equipment may be furnished or used by CONTRACTOR if acceptable to ENGINEER, application for such acceptance will not be considered by ENGINEER until after the Effective Date of the Agreement. The procedure for submission of any such application by CONTRACTOR and consideration by ENGINEER is set forth in Paragraphs 6.7.1, 6.7.2 and 6.7.3 of the General Conditions and may be supplemented in the General Requirements.

10.0 SUBCONTRACTORS, SUPPLIERS AND OTHERS

10.1 If the Supplementary Conditions require or the OWNER would request the identity of certain Subcontractors, Suppliers and other persons and organizations to be submitted to OWNER in advance of the Notice of Award, the apparent Successful BIDDER, and any other BIDDER so requested, will within seven days of the Bid opening submit to OWNER a list of all such Subcontractors, Suppliers and other persons and organizations proposed for those portions of the Work for which such identification is required. Such list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier and other persons or organizations if requested by OWNER. If OWNER or ENGINEER after due investigation has reasonable objection to any proposed Subcontractor, Supplier or other persons or organizations, either may before the Notice of Award is given, request the apparent Successful BIDDER to submit an acceptable substitute without an increase in Bid price. If the apparent Successful BIDDER declines to make any such substitution, the OWNER may award the contract to the next lowest BIDDER that proposes to use acceptable Subcontractors, Suppliers and other persons or organizations. The declining to make requested substitution will not constitute grounds for sacrificing the Bid Security of any BIDDER. Any Subcontractor, Supplier or other persons or organizations listed and to whom OWNER or ENGINEER does not make written objection prior to the giving of the Notice of Award will be deemed acceptable to OWNER and ENGINEER subject to revocation of such acceptance after the Effective Date of the Agreement as provided in Paragraph 6.8.2 of the General Conditions.

10.2 No CONTRACTOR shall be required to employ any Subcontractor, Supplier or other persons or organizations against whom CONTRACTOR has reasonable objection.

11.0 BID FORM

11.1 The Bid Form is included with the Bidding Documents; additional copies may be obtained from the ENGINEER. Bids shall be strictly in accordance with the prescribed form. Any modifications thereof or deviations therefrom may be considered as sufficient cause for rejection. Bids carrying riders or qualifications to the Bid being submitted may be rejected as irregular.

11.2 The Bid Form must be completed in ink or by typewriter. If changes appears on the Bid Form, each change must be initialed by the person signing the Bid.

11.3 Bids by corporations must be executed in the corporate name by an official who is authorized to bind the corporation, and the corporate seal must be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation must be shown below the signature. The Bid of a corporation which is signed by a person other than a corporate officer must be accompanied by a Power of Attorney showing that person's authority.

11.4 Bids by partnerships must be executed in the partnership name and signed by a partner, whose title must appear under the signature and the official address of the partnership must be shown below the signature.

11.5 All signatures are to be in ink and names must be typed or printed below the signature. The title of the person(s) executing the Bid shall be clearly indicated beneath the signature.

11.6 The Bid shall contain an acknowledgment of receipt of all Addenda (the numbers of which must be filled in on the Bid Form). Bids in which all issued addenda are not acknowledged will be considered incomplete and will not be read.

11.7 The address and telephone number for communications regarding the Bid must be shown.

11.8 Current Montana Contractor's registration number must be shown.

11.9 The Bid will not be considered unless all items in the Unit Price Schedule are priced.

11.10 The Bid will not be considered unless the Bid Form contains the Unit Prices Bid and totals shown legibly in their proper locations on the Bid Form. The Total Amount of Unit Prices Bid shall be legibly written and numerically presented in the proper places and the Bid Form shall be manually signed.

11.11 The Bid will not be considered unless accompanied by proper Bid Security in accordance with Article 6 of these Instruction to Bidders.

11.12 Alternate Bids will not be considered unless called for.

11.13 Bids by telephone, telegraph, fax or other telecommunication systems will not be considered.

11.14 No BIDDER may submit more than one Bid. Two Bids under different names will not be received from one firm or association.

12.0 SUBMISSION OF BIDS

12.1 Bid shall be submitted at the time and place indicated in the Invitation to Bid and shall be enclosed in an opaque sealed envelope, marked with the Project title, name and address of the BIDDER, the words "Sealed Bid" and accompanied by the Bid Security and other required documents. If the Bid is sent through the mail, hand delivered or other delivery system the sealed envelope shall be enclosed in a separate envelope with the notation "**BID ENCLOSED**" on the face thereof. (Failure to do so may result in a premature opening of, or a failure to open such Bid.) No BIDDER may submit more than one (1) Bid. Two bids under different names will not be accepted from one firm or association.

13.0 MODIFICATION AND WITHDRAWAL OF BIDS

13.1 Bids may be modified or withdrawn by an appropriate document duly executed (in the manner that a Bid must be executed) and delivered to the place where Bids are to be submitted at any time prior to the opening of Bids as called for in the Invitation to Bid. Requests for modification or withdrawal must be written and must be signed in the same manner and by the same person(s) who signed the Bid.

13.2 If, within twenty-four hours after Bids are opened, any BIDDER files a duly signed, written notice with OWNER and promptly thereafter demonstrates to the reasonable satisfaction of OWNER that there was a material and substantial mistake in the preparation of its Bid, that BIDDER may withdraw its Bid and the Bid security will be returned. Thereafter, that BIDDER will be disqualified from further bidding on the Work to be provided under the Contract Documents.

13.3 Bids and modifications or withdrawals thereof received at the office designated in the Invitation for Bid after the exact time set for opening of Bids will not be considered unless: They are received before award is made; and either (1) they are sent by registered mail, or by certified mail not later than the fifth calendar day before the date specified for the Bid for which an official dated post office stamp (postmark) on the original Receipt for Certified Mail has been obtained and it is determined by the OWNER that the late receipt was due solely to delay in the mail for which the BIDDER was not responsible; or (2) if submitted by mail, it is determined by the OWNER that the late receipt was due solely to mishandling by the OWNER after receipt at the OWNER's installation: PROVIDED, that timely receipt at such installation is established upon examination of an appropriate date or time stamp (if any) of such installation, or of other documentary evidence of receipt (if readily available) within the control of such installation or of the post office serving it; or (3) was sent by U. S. Postal Express Mail next day service not later than 5:00 P.M. at the place of mailing two working days prior to the date specified for receipt of Bids.

13.4 BIDDERS using certified mail are cautioned to obtain a Receipt for Certified Mail showing a legible, dated postmark and to retain such receipt against the chance that it will be required as evidence that a Bid was timely mailed.

If the post mark on the original Receipt for Certified Mail does not show a date, the Bid shall not be considered.

14.0 OPENING OF BIDS

14.1 Bids will be opened at the time set for opening in the Invitation to Bid

15.0 BIDS TO REMAIN SUBJECT TO ACCEPTANCE

15.1 All bids will remain subject to acceptance for sixty (60) days after the day of the Bid opening, but OWNER may, in its sole discretion, release any Bid and return the Bid security prior to that date.

16.0 AWARD OF CONTRACT

16.1 OWNER reserves the right to reject any and all Bids, to waive any and all minor informalities, and the right to disregard all nonconforming, non-responsive, unbalanced or conditional Bids. Also, OWNER reserves the right to reject the Bid of any BIDDER if OWNER believes that it would not be in the best interest of the Project to make an award to that BIDDER, whether because the Bid is not responsive or the BIDDER is unqualified or of doubtful financial ability or fails to meet any other pertinent standard or criteria established by OWNER. Discrepancies in the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.

16.2 OWNER may conduct such investigations as OWNER deems necessary to assist in the evaluation of any Bid and to establish the responsibility, qualifications and financial ability of the BIDDER or BIDDERS, proposed Subcontractors, Suppliers and other persons and organizations to perform and furnish the Work in accordance with the Contract Documents to OWNER's satisfaction within the prescribed time.

16.3 If the Contract is to be awarded, OWNER will give the Successful BIDDER a Notice of Award within sixty (60) days after the day of the Bid opening.

16.4 The OWNER reserves the right to accept or reject the Bids, or portions of Bids if denoted in the Bid as separate schedules, and to award more than one Bid or schedule for the same Bid if any of the aforementioned combination of Bids or schedules will be in the best interest of the OWNER.

16.5 The OWNER reserves the right to cancel the award of any contract at any time before the complete execution of said Agreement by all parties without any liability against the OWNER.

17.0 CONTRACT SECURITY

Paragraph 5.1 of the General Conditions and the Supplementary Conditions set forth OWNER's requirements as to performance and payment Bonds. When the Successful BIDDER delivers

the executed Agreement to OWNER, it must be accompanied by the required performance and payment Bonds.

18.0 SIGNING OF AGREEMENT

When OWNER gives a Notice of Award to the Successful BIDDER, it will be accompanied by the required number of unsigned counterparts of the Agreement with all other written Contract Documents attached. Within fifteen (15) days thereafter CONTRACTOR shall sign and deliver at least three (3) counterparts of the Agreement and attached documents to OWNER with the required Bonds and certificate of insurance verifying compliance with insurance requirements of the Contract and/or any statutes or ordinances. Within fifteen (15) days thereafter OWNER shall deliver one fully signed counterpart to CONTRACTOR.

19.0 STATE LAWS AND REGULATIONS

All applicable laws, ordinances and the rules and regulations of authorities having jurisdiction over construction of the project shall apply to the Contract throughout. State laws and ordinances which the CONTRACTOR must comply with, include but are not limited to, those involving workmen's compensation insurance, contractor registration, employment preference to Montana contractors and Montana residents, and gross receipts tax.

SECTION 0000
BID FORM

1. PROJECT IDENTIFICATION

City of Helena, LEAD/CO-LEAD/CONSULTANT/PROJECT NAME/PROJECT NO./PROJECT LOCATION/PROJECT AREA

2. THIS BID IS SUBMITTED TO

City of Helena, City of Helena, 200 North Park Avenue, Helena, MT 59601

3. CONTRACT

The undersigned hereby certifies and agrees that this bid is submitted in accordance with the Agreement with the City of Helena, Montana, as amended, and that the undersigned is a duly qualified contractor for the work to be performed under the contract. The undersigned further certifies and agrees that this bid is submitted in accordance with the Agreement with the City of Helena, Montana, as amended, and that the undersigned is a duly qualified contractor for the work to be performed under the contract.

SECTION 2.0

GENERAL DOCUMENTS

SECTION 00300 - BID FORM

BID BOND

SECTION 00500 - AGREEMENT FORM

CONSTRUCTION PAYMENT BOND

CONSTRUCTION PERFORMANCE BOND

SECTION 00300

BID FORM

1.0 PROJECT IDENTIFICATION

City of Helena Landfill Gas Extraction System Project 99-2, Phase II Carroll College Area.

2.0 THIS BID SUBMITTED TO

Clerk of the Commission, City of Helena, 316 North Park Avenue, Helena, MT 59601

3.0 CONTRACT

The undersigned BIDDER proposes and agrees if this Bid is accepted, to enter into an Agreement with OWNER in the form included in the Contract Documents, to perform and furnish all Work as specified or indicated in the Contract Documents for the Contract Prices and within the Contract Time indicated in this Bid and in accordance with the other terms and conditions of the Contract Documents.

4.0 BID TO REMAIN OPEN

BIDDER accepts all of the terms and conditions of the Advertisement or Invitation to Bid, and Instruction to Bidders, including without limitation those dealing with the disposition of Bid Security. This Bid will remain subject to acceptance for sixty (60) days after the day of Bid opening. BIDDER will sign and submit the Agreement with the Bonds and other documents required by the Bidding Requirements within fifteen (15) days after the date of OWNER's Notice of Award.

5.0 SUBMITTING THE BID

In submitting this Bid, BIDDER represents, as more fully set forth in the Agreement, that:

5.1 BIDDER has examined copies of all Bidding Documents and Addenda and hereby acknowledges receipt of the following Addenda:

<u>Addenda No.</u>	<u>Date</u>
_____	_____
_____	_____
_____	_____

5.2 BIDDER has familiarized itself with the nature and extent of the Contract Documents, Work, site, locality, and all local conditions and Laws and Regulations that in any manner may affect cost, progress, performance or furnishing of the Work.

5.3 BIDDER has carefully studied all reports and drawings of subsurface conditions and drawings of physical conditions which are identified in the Supplementary Conditions as provided in paragraph 4.2 of the General Conditions, and accepts the determination set forth in paragraph SC-4.2 of the Supplementary Conditions of the extent of the technical data contained in such reports and drawings upon which BIDDER is entitled to rely.

5.4 BIDDER has obtained and carefully studied (or assumes responsibility for obtaining and carefully studying) all such examinations, investigations, explorations, tests and studies (in addition to or to supplement those referred to in 5.3 above) which pertain to subsurface or physical conditions at the site or otherwise may affect the cost, progress, performance or furnishing of the Work as BIDDER considers necessary for the performance or furnishing of the Work at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of the Contract Documents, including specifically the provisions of paragraph 4.2 of the General Conditions; and no additional examinations, investigation, explorations, tests, reports or similar information or data are or will be required by BIDDER for such purposes.

5.5 BIDDER has reviewed and checked all information and data shown or indicated on the Contract Documents with respect to existing Underground Facilities at or contiguous to the site and assumes responsibility for the accurate location of said Underground Facilities. No additional examinations, investigations, explorations, tests, reports or similar information or data in respect of said Underground Facilities are or will be required by BIDDER to perform and furnish the Work at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of the Contract Documents, including specifically the provisions of paragraph 4.3 of the General Conditions.

5.6 BIDDER has correlated the results of all such observations, examinations, investigations, explorations, tests, reports and studies with the terms and conditions of the Contract Documents.

5.7 BIDDER has given OWNER written notice of all conflicts, error or discrepancies that it has discovered in the Contract Documents and the written resolution thereof by OWNER is acceptable to BIDDER.

5.8 This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; BIDDER has not directly or indirectly induced or solicited any other bidder to submit a false or sham Bid; BIDDER has not solicited or induced any person, firm or corporation to refrain from bidding; and BIDDER has not sought by collusion to obtain for itself any advantage over any other bidder or over OWNER.

5.9 The BIDDER certifies that no official of the OWNER, ENGINEER or any member of such officials immediate family, has direct or indirect interest in the pecuniary profits or Contracts of the BIDDER.

6.0 UNIT PRICE SCHEDULE

The BIDDER understands the Estimated Quantities are for the purpose of comparing Bids from the various BIDDERS and that payment under the Contract will be for the actual quantities of work installed and measured in accordance with the Contract Documents. BIDDER will complete the Work shown on the bid schedule on the following page.

7.0 BID DISCREPANCIES

The undersigned agrees that the unit prices shall govern in checking the Bid, and should a discrepancy exist in the Total Estimated Price and Total Amount of Unit Prices Bid as listed above after extensions are checked and corrections made, if any, the Total Amount of Unit Prices Bid as corrected shall be used in awarding this Contract.

8.0 CONTRACT TIME

BIDDER agrees that the Work will be substantially complete and ready for final payment in accordance with 14.13 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.

9.0 LIQUIDATED DAMAGES

BIDDER accepts the provisions of the Agreement as to liquidated damages in the event of failure to complete the Work on time.

10.0 BID DOCUMENTS

The required bid security (Section 00410) is attached to and made a condition of this bid.

11.0 BID REJECTION

The OWNER reserves the right to reject any or all Bids.

BID SCHEDULE - SECTION 6.0

Item No.	Item of Work	Unit	Quantity	Unit Cost	Total Cost
1	Mobilization and Demobilization	LS	1		
2	Sawcut and Repair Existing Paving	LF	100		
3	Install Methane Extraction Trench Complete with Excavation, Landfill Edge Location, Liner, 6-inch Pipe, Backfill, Compact, and Haul Excess Material to Designated Area	LF	1275		
4	Construct Vent House with Roof	LS	1		
5	Remove and Reset Fence	LF	250		

CITY OF HELENA LANDFILL GAS EXTRACTION PROJECT 99-2
BID SHEET
EQUIPMENT AND PERSONNEL RATES

These rates will not exceed the current Data Quest "Contractor's Equipment Cost Guide."

The following unit rates for labor and equipment will be utilized to calculate additional compensation due to the Contractor for Standby, Changes in the Work and Extra Work. Standby may be approved by the Engineer and Owner for situations beyond the Contractor's control that prevent the Contractor from proceeding with the schedule presented with this bid and approved by the Owner.

LABOR

	<u>Description</u>	<u>Rates</u>
1.	_____	Hour _____ Week _____ Month _____
2.	_____	Hour _____ Week _____ Month _____
3.	_____	Hour _____ Week _____ Month _____
4.	_____	Hour _____ Week _____ Month _____
5.	_____	Hour _____ Week _____ Month _____

EQUIPMENT

Rate Including Operator

1.	_____	Hour	_____
		Week	_____
		Month	_____
2.	_____	Hour	_____
		Week	_____
		Month	_____
3.	_____	Hour	_____
		Week	_____
		Month	_____
4.	_____	Hour	_____
		Week	_____
		Month	_____
5.	_____	Hour	_____
		Week	_____
		Month	_____
6.	_____	Hour	_____
		Week	_____
		Month	_____
7.	_____	Hour	_____
		Week	_____
		Month	_____

EQUIPMENT

Rate
Including Operator

8. _____ Hour _____

Week _____

Month _____

9. _____ Hour _____

Week _____

Month _____

10. _____ Hour _____

Week _____

Month _____

11. _____ Hour _____

Week _____

Month _____

12. _____ Hour _____

Week _____

Month _____

12.0 NAME OF BIDDER

Communications concerning this Bid shall be addressed to:

(Name of BIDDER)

(Organization)

(Street, P.O. Box)

(City)

(State)

(Zip Code)

13.0 MEANING OF TERMS

The terms used in this Bid which are defined in the General Conditions of the Construction Contract included as part of the Contract Documents have the meanings assigned to them in the General Conditions.

14.0 BID SUBMISSION

SUBMITTED on _____, 19____.

Montana Contractor's Registration No. _____

15.0 BIDDER'S BUSINESS

The BIDDER represents that he operates as an _____ individual,
_____ partnership, _____ joint venture, _____ corporation, incorporated in the
State of _____.

15.1 If BIDDER is an Individual:

By _____ (SEAL)
(Individual's Name)

doing business as _____

Business Address: _____

Phone No.: _____

15.2 A Partnership:

By _____ (SEAL)
(Firm Name)

(General Partner)

Business Address: _____

Phone No.: _____

15.3 A Corporation:

By: _____
(Corporation Name)

(State of Incorporation)

By: _____
(Name of person authorized to sign)

(Title)

(Corporate Seal)

Attest _____
(Secretary)

Business Address: _____

Phone No.: _____

15.4 A Joint Venture:

By: _____
(Name)

(Address)

By: _____
(Name)

(Each Joint Venture must sign. The manner of signing for each individual, partnership and corporation that is a party to the joint venture should be in the manner indicated above.)

END OF SECTION 00300

BID BOND

BIDDER (Name and Address):

SURETY (Name and Address of Principal Place of Business):

OWNER (Name and Address):

BID

BID DUE DATE: _____

PROJECT (Brief Description Including Location): _____

BOND

BOND NUMBER: _____

DATE: (Not later than Bid Due Date): _____

PENAL SUM: _____

IN WITNESS WHEREOF, Surety and Bidder, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause this Bid Bond to be duly executed on its behalf by its authorized officer, agent, or representative.

BIDDER

SURETY

 _____ (Seal)
 Bidder's Name and Corporate Seal

 _____ (Seal)
 Surety's Name and Corporate Seal

 By: _____
 Signature and Title

 By: _____
 Signature and Title
 (Attach Power of Attorney)

 Attest: _____
 Signature and Title

 Attest: _____
 Signature and Title

- Note: (1) Above addresses are to be used for giving required notice.
 (2) Any singular reference to Bidder, Surety, Owner or other party shall be considered plural where applicable.

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to pay to Owner upon default of Bidder the penal sum set forth on the face of this Bond.
2. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding Documents the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents and Contract Documents.
3. This obligation shall be null and void if:
 - 3.1. Owner accepts Bidder's bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents and Contract Documents, or
 - 3.2. All bids are rejected by Owner, or
 - 3.3. Owner fails to issue a notice of award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by paragraph 5 hereof).
4. Payment under this Bond will be due and payable upon default of Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.
5. Surety waives notice of and any and all defenses based on or arising out of any time extension to issue notice of award agreed to in writing by Owner and Bidder, provided that the time for issuing notice of award including extensions shall not in the aggregate exceed 120 days from Bid Due Date without Surety's written consent.
6. No suit or action shall be commenced under this Bond prior to 30 calendar days after the notice of default required in paragraph 4 above is received by Bidder and Surety, and in no case later than one year after Bid Due Date.
7. Any suit or action under this Bond shall be commenced only in a court of competent jurisdiction located in the state in which the Project is located.
8. Notice required hereunder shall be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier or by United States Registered or Certified Mail, return receipt requested, postage pre-paid, and shall be deemed to be effective upon receipt by the party concerned.
9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent or representative who executed this Bond on behalf of Surety to execute, seal and deliver such Bond and bind the Surety thereby.
10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond shall be deemed to be included herein as if set forth at length. If any provision of the Bond conflicts with any applicable provision of any applicable statute, then the provision of said statute shall govern and the remainder of this Bond that is not in conflict therewith shall continue in full force and effect.
11. The term "bid" as used herein includes a bid, offer or proposal as applicable.

SECTION 00500
AGREEMENT FORM

THIS AGREEMENT is dated as of the ____ day of _____, by and between the CITY OF HELENA, herinafter called "**OWNER**" and _____ doing business as (an individual), (a partnership), or (a corporation) herinafter called "**CONTRACTOR.**"

OWNER and CONTRACTOR, in consideration of the mutual covenants herinafter set forth, agree as follows:

Article 1. WORK.

CONTRACTOR shall complete all work as specified or indicated in the Contract Documents. The Work is generally described as follows: **Installation of a passive gas extraction system consisting of approximately 1275 lineal feet of trench excavation, haul excess material, installation of 6-inch slotted ADS corrugated polyethylene horizontal extraction pipe, 20 mil PVC liner, gravel backfill, top cap backfill and compaction, and construction of vent house with roof.**

The Project for which the Work under the Contract Documents may be the whole or only a part is generally described as follows: **Helena Landfill Gas Extraction System – Phase II Carroll College Area.**

Article 2. CONTRACT TIME.

2.1 The Work will be completed within **60 calendar days** after the date when the contract time commences to run as provided in the General Conditions. Final payment will be withheld until final completion and acceptance of the work as stipulated in this Agreement.

2.2 Liquidated Damages. OWNER and CONTRACTOR recognize that time is of the essence of this Agreement and that OWNER will suffer financial loss if the Work is not substantially complete within the time specified above, plus any extensions thereof allowed in accordance with the General Conditions. They also recognize the delays, expense and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by OWNER if the Work is not substantially complete on time. Accordingly, instead of requiring any such proof, OWNER and CONTRACTOR agree that as liquidated damages for delay (but not as a penalty) CONTRACTOR shall pay OWNER **five hundred dollars (\$500.00)** for each day that expires after the time specified herein until the work is substantially completed.

Article 3. CONTRACT PRICE.

3.1 OWNER shall pay CONTRACTOR for performance of the Work in accordance with the Contract Documents the sum (subject to adjustment as provided in the Contract Documents) of _____
\$ _____

Article 4. PAYMENT PROCEDURES.

CONTRACTOR shall submit applications for payment in accordance with the General Conditions. Applications for payment will be processed as provided in the General Conditions.

4.1 Progress Payments. OWNER will make progress payments monthly on account of the contract price on the basis of CONTRACTOR'S applications for payment as recommended by ENGINEER. All progress payments will be on the basis of the progress of the work measured by the schedule of values provided for in the General Conditions.

4.1.1 The OWNER may retain a portion of the amount due the CONTRACTOR in accordance with the General Conditions and as outlined herein. Five (5) percent of the amount of each payment shall be withheld until work is 50 percent complete based upon dollar value of the contract work items. When work is 50 percent complete, the amount withheld may be reduced below five (5) percent of the dollar value of the work satisfactorily completed at the discretion of the Owner and provided that the CONTRACTOR is making satisfactory progress and there is no specific cause for greater withholding. When the work is substantially complete, the amount withheld shall be further reduced below five (5) percent to an amount determined by the ENGINEER necessary to assure completion. Up to five (5) percent withholding may be reinstated after the 50 percent completion stage if the OWNER, at his discretion, determines that the progress is not satisfactory or if there is other specific cause for such withholding.

4.2 Final Payment. Upon final completion and acceptance of the Work in accordance with the General Conditions, OWNER shall pay the remainder of the contract price as recommended by ENGINEER.

Article 5. INTEREST.

All monies not paid when due hereunder shall bear interest at the simple rate established by the Federal Cost of Money Rate commencing at the time of a claim.

Article 6. CONTRACTOR'S REPRESENTATIONS.

In order to induce OWNER to enter into this Agreement, CONTRACTOR makes the following representations:

6.1 CONTRACTOR has familiarized himself with the nature and extent of the Contract Documents, Work, locality, and with all local conditions and federal, state and local laws, ordinances, rules and regulations that in any manner may affect cost, progress or performance of the Work.

6.2 CONTRACTOR has studied carefully all reports of investigations and tests of subsurface and latent physical conditions at the site or otherwise affecting cost, progress or performance of the Work which were relied upon by ENGINEER in the preparation of the drawings and specifications and which have been identified in the modifications to the General Conditions.

6.3 CONTRACTOR has made or caused to be made examinations, investigations and tests and studies of such reports and related data in addition to those referred to above as he deems necessary for the performance of the Work at the contract price, within the contract time and in accordance with the other terms and conditions of the Contract Documents, and no additional examinations, investigations, tests, reports or similar data are or will be required by CONTRACTOR for such purposes.

6.4 CONTRACTOR has correlated the results of all such observations, examinations, investigations, tests, reports and data with the terms and conditions of the Contract Documents.

6.5 CONTRACTOR has given ENGINEER written notice of all conflicts, errors or discrepancies that he has discovered in the Contract Documents and the written resolution thereof by ENGINEER is acceptable to CONTRACTOR.

Article 7. CONTRACT DOCUMENTS.

The Contract Documents, which comprise the entire agreement between OWNER and CONTRACTOR, are attached to this Agreement, made a part hereof and consist of the following:

7.1 This Agreement.

7.2 Exhibits to this Agreement (if any).

7.3 Performance Bond and Payment Bond.

7.4 Invitation To Bid.

7.5 Instructions To Bidders.

7.6 Certificates of Insurance.

7.7 General Conditions (see 7.11).

7.8 Supplementary Conditions.

7.9 Montana Wage Rates.

7.10 Special Technical Provisions, if applicable.

7.11 Montana Public Works Standard Specifications, Third Edition, (including addendums) dated October 1988.

7.12 Special Supplementary Conditions.

7.13 Technical Specifications, if applicable.

7.14 Drawings.

7.15 Addenda listed on the Bid forms.

7.16 CONTRACTOR'S executed Bid forms.

7.17 Documentation submitted by CONTRACTOR prior to Notice of Award.

7.18 Notice of Award.

7.19 Notice to Proceed.

7.20 Any Modification, including Change Orders, duly delivered after execution of Agreement.

7.21 Any Notice of Partial Utilization.

7.22 Notice of Substantial Completion.

7.23 Notices of Final Completion and Acceptance.

There are no Contract Documents other than those listed above in this Article 7. The Contract Documents may only be altered, amended or repealed by a modification (as defined in the General Conditions).

Article 8. MISCELLANEOUS

8.1 Terms used in this Agreement are defined in the General Conditions.

8.2 This Agreement and all of the covenants hereof shall inure to the benefit of and be binding upon the OWNER and the CONTRACTOR respectively and his partners, successors, assigns, and legal representatives. Neither the OWNER nor the CONTRACTOR shall have the right to assign, transfer or sublet his interest or obligations hereunder without written consent of the other party. The Owner reserves the right to withdraw at any time from any subcontractor whose work has proven unsatisfactory the right to be engaged in or employed upon any part of the work.

8.3 In the event it becomes necessary for either party to this Agreement to retain an attorney to enforce any of the terms or conditions of this Agreement or to give any notice required herein, then the prevailing party or the party giving notice shall be entitled to reasonable attorney's fees and costs.

8.4 Any amendment or modifications of this Agreement or any provisions herein shall be made in writing and executed in the same manner as this original document and shall after execution become a part of the Agreement.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement the day and year first above written.

(Contractor)

By _____ (SEAL &
(ATTEST)

.....
TITLE

(Joint Venture)

By _____ (SEAL &
(ATTEST)

Title _____

DENNIS M. TAYLOR for CITY OF HELENA
(Owner)

By _____ (SEAL &
(ATTEST)

Title _____

APPROVED AS TO FORM:

(Attorney)

Construction Payment Bond

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

CONTRACTOR (Name and Address):

SURETY (Name and Principal Place of Business):

OWNER (Name and Address):

CONSTRUCTION CONTRACT

Date:

Amount:

Description (Name and Location):

BOND

Date (Not earlier than Construction Contract Date):

Amount:

Modifications to this Bond Form:

CONTRACTOR AS PRINCIPAL

Company:

(Corp. Seal)

Signature: _____

Name and Title:

SURETY

Company:

(Corp. Seal)

Signature: _____

Name and Title:

CONTRACTOR AS PRINCIPAL

Company:

(Corp. Seal)

Signature: _____

Name and Title:

SURETY

Company:

(Corp. Seal)

Signature: _____

Name and Title:

1. The Contractor and the Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner to pay for labor, materials and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference.
2. With respect to the Owner, this obligation shall be null and void if the Contractor:
 - 2.1. Promptly makes payment, directly or indirectly, for all sums due Claimants, and
 - 2.2. Defends, indemnifies and holds harmless the Owner from all claims, demands, liens or suits by any person or entity who furnished labor, materials or equipment for use in the performance of the Construction Contract, provided the Owner has promptly notified the Contractor and the Surety (at the address described in Paragraph 12) of any claims, demands, liens or suits and tendered defense of such claims, demands, liens or suits to the Contractor and the Surety, and provided there is no Owner Default.
3. With respect to Claimants, this obligation shall be null and void if the Contractor promptly makes payment, directly or indirectly, for all sums due.
4. The Surety shall have no obligation to Claimants under this Bond until:
 - 4.1. Claimants who are employed by or have a direct contract with the Contractor have given notice to the Surety (at the address described in Paragraph 12) and sent a copy, or notice thereof, to the Owner, stating that a claim is being made under this Bond and, with substantial accuracy, the amount of the claim.
 - 4.2. Claimants who do not have a direct contract with the Contractor:
 1. Have furnished written notice to the Contractor and sent a copy, or notice thereof, to the Owner, within 90 days after having last performed labor or last furnished materials or equipment included in the claim stating, with substantial accuracy, the amount of the claim and the name of the party to whom the materials were furnished or supplied or for whom the labor was done or performed; and
 2. Have either received a rejection in whole or in part from the Contractor, or not received within 30 days of furnishing the above notice any communication from the Contractor by which the Contractor has indicated the claim will be paid directly or indirectly; and
 3. Not having been paid within the above 30 days, have sent a written notice to the Surety (at the address described in Paragraph 12) and sent a copy, or notice thereof, to the Owner, stating that a claim is being made under this Bond and enclosing a copy of the previous written notice furnished to the Contractor.
5. If a notice required by Paragraph 4 is given by the Owner to the Contractor or to the Surety, that is sufficient compliance.
6. When the Claimant has satisfied the conditions of Paragraph 4, the Surety shall promptly and at the Surety's expense take the following actions:
 - 6.1. Send an answer to the Claimant, with a copy to the Owner, within 45 days after receipt of the claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed.
 - 6.2. Pay or arrange for payment of any undisputed amounts.
7. The Surety's total obligation shall not exceed the amount of this Bond, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.
8. Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract

and to satisfy claims, if any, under any Construction Performance Bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and the Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.

9. The Surety shall not be liable to the Owner. Claimants or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligations to make payments to, give notices on behalf of, or otherwise have obligations to Claimants under this Bond.

10. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

11. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the location in which the work or part of the work is located or after the expiration of one year from the date (1) on which the Claimant gave the notice required by Subparagraph 4.1 or Clause 4.2 (iii), or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

12. Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the signature page. Actual receipt of notice by Surety, the Owner or the Contractor, however accomplished, shall be sufficient compliance as of the date received at the address shown on the signature page.

13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. The intent is, that this Bond shall be construed as a statutory bond and not as a common law bond.

14. Upon request by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor shall promptly furnish a copy of this Bond or shall permit a copy to be made.

15. DEFINITIONS

15.1. Claimant: An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials or equipment for use in the performance of the Contract. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials or equipment were furnished.

15.2. Construction Contract: The agreement between the Owner and the Contractor identified on the signature page, including all Contract Documents and changes thereto.

15.3. Owner Default: Failure of the Owner, which has neither been remedied nor waived, to pay the Contractor as required by the Construction Contract or to perform and complete or comply with the other terms thereof.

(FOR INFORMATION ONLY—Name, Address and Telephone)

AGENT or BROKER:

OWNER'S REPRESENTATIVE (Architect, Engineer or other party):

Construction Performance Bond

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

CONTRACTOR (Name and Address):

SURETY (Name and Principal Place of Business):

OWNER (Name and Address):

CONSTRUCTION CONTRACT

Date:

Amount:

Description (Name and Location):

BOND

Date (Not earlier than Construction Contract Date):

Amount:

Modifications to this Bond Form:

CONTRACTOR AS PRINCIPAL

Company: (Corp. Seal)

Signature: _____

Name and Title:

SURETY

Company: (Corp. Seal)

Signature: _____

Name and Title:

CONTRACTOR AS PRINCIPAL

Company: (Corp. Seal)

Signature: _____

Name and Title:

SURETY

Company: (Corp. Seal)

Signature: _____

Name and Title:

1. The Contractor and the Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.
2. If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except to participate in conferences as provided in Subparagraph 3.1.
3. If there is no Owner Default, the Surety's obligation under this Bond shall arise after:
 - 3.1. The Owner has notified the Contractor and the Surety at its address described in Paragraph 10 below, that the Owner is considering declaring a Contractor Default and has requested and attempted to arrange a conference with the Contractor and the Surety to be held not later than fifteen days after receipt of such notice to discuss methods of performing the Construction Contract. If the Owner, the Contractor and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default; and
 - 3.2. The Owner has declared a Contractor Default and formally terminated the Contractor's right to complete the contract. Such Contractor Default shall not be declared earlier than twenty days after the Contractor and the Surety have received notice as provided in Subparagraph 3.1; and
 - 3.3. The Owner has agreed to pay the Balance of the Contract Price to the Surety in accordance with the terms of the Construction Contract or to a contractor selected to perform the Construction Contract in accordance with the terms of the contract with the Owner.
4. When the Owner has satisfied the conditions of Paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:
 - 4.1. Arrange for the Contractor, with consent of the Owner, to perform and complete the Construction Contract; or
 - 4.2. Undertake to perform and complete the Construction Contract itself, through its agents or through independent contractors; or
 - 4.3. Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and the contractor selected with the Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Paragraph 6 in excess of the Balance of the Contract Price incurred by the Owner resulting from the Contractor's default; or
 - 4.4. Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances:
 1. After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, tender payment therefor to the Owner; or
 2. Deny liability in whole or in part and notify the Owner citing reasons therefor.
5. If the Surety does not proceed as provided in Paragraph 4 with reasonable promptness, the Surety shall be deemed to be in default on this Bond fifteen days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Subparagraph 4.4, and the Owner refuses the payment tendered or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.
6. After the Owner has terminated the Contractor's right to complete the Construction Contract, and if the Surety elects to act under Subparagraph 4.1, 4.2, or 4.3 above, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. To the limit of the amount of this Bond, but subject to commitment by the Owner of the Balance of the Contract Price to mitigation of costs and damages on the Construction Contract, the Surety is obligated without duplication for:
 - 6.1. The responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;
 - 6.2. Additional legal, design professional and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Paragraph 4; and
 - 6.3. Liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.
7. The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, or successors.
8. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.
9. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.
10. Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the signature page.
11. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory bond and not as a common law bond.
12. Definitions.
 - 12.1. Balance of the Contract Price: The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made, including allowance to the Contractor of any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.
 - 12.2. Construction Contract: The agreement between the Owner and the Contractor identified on the signature page, including all Contract Documents and changes thereto.
 - 12.3. Contractor Default: Failure of the Contractor, which has neither been remedied nor waived, to perform or otherwise to comply with the terms of the Construction Contract.
 - 12.4. Owner Default: Failure of the Owner, which has neither been remedied nor waived, to pay the Contractor as required by the Construction Contract or to perform and complete or comply with the other terms thereof.

(FOR INFORMATION ONLY—Name, Address and Telephone)

AGENT or BROKER:

OWNER'S REPRESENTATIVE (Architect, Engineer or other party):

SECTION 3.0
GENERAL CONDITIONS

STANDARD GENERAL CONDITIONS

SECTION 00810 - SUPPLEMENTARY CONDITIONS

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GENERAL CONDITIONS

ARTICLE 1—DEFINITIONS

Wherever used in these General Conditions or in the other Contract Documents the following terms have the meanings indicated which are applicable to both the singular and plural thereof:

1.1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct or change the Bidding Requirements or the Contract Documents.

1.2. *Agreement*—The written contract between OWNER and CONTRACTOR covering the Work to be performed; other Contract Documents are attached to the Agreement and made a part thereof as provided therein.

1.3. *Application for Payment*—The form accepted by ENGINEER which is to be used by CONTRACTOR in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

1.4. *Asbestos*—Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.

1.5. *Bid*—The offer or proposal of the bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

1.6. *Bidding Documents*—The advertisement or invitation to Bid, instructions to bidders, the Bid form, and the proposed Contract Documents (including all Addenda issued prior to receipt of Bids).

1.7. *Bidding Requirements*—The advertisement or invitation to Bid, instructions to bidders, and the Bid form.

1.8. *Bonds*—Performance and Payment bonds and other instruments of security.

1.9. *Change Order*—A document recommended by ENGINEER, which is signed by CONTRACTOR and OWNER and authorizes an addition, deletion or revision in the Work, or an adjustment in the Contract Price or the Contract Times, issued on or after the Effective Date of the Agreement.

1.10. *Contract Documents*—The Agreement, Addenda (which pertain to the Contract Documents), CONTRACTOR's Bid (including documentation accompanying the Bid and any post Bid documentation submitted prior to the Notice of Award) when attached as an exhibit to the Agreement, the Notice to Proceed, the Bonds, these General Conditions, the Supplementary Conditions, the Specifications and the Drawings as the same are more specifically identified in the Agree-

ment, together with all Written Amendments, Change Orders, Work Change Directives, Field Orders and ENGINEER's written interpretations and clarifications issued pursuant to paragraphs 3.5, 3.6.1, and 3.6.3 on or after the Effective Date of the Agreement. Shop Drawing submittals approved pursuant to paragraphs 6.26 and 6.27 and the reports and drawings referred to in paragraphs 4.2.1.1 and 4.2.2.2 are not Contract Documents.

1.11. *Contract Price*—The moneys payable by OWNER to CONTRACTOR for completion of the Work in accordance with the Contract Documents as stated in the Agreement (subject to the provisions of paragraph 11.9.1 in the case of Unit Price Work).

1.12. *Contract Times*—The numbers of days or the dates stated in the Agreement: (i) to achieve Substantial Completion, and (ii) to complete the Work so that it is ready for final payment as evidenced by ENGINEER's written recommendation of final payment in accordance with paragraph 14.13.

1.13. *CONTRACTOR*—The person, firm or corporation with whom OWNER has entered into the Agreement.

1.14. *defective*—An adjective which when modifying the word Work refers to Work that is unsatisfactory, faulty or deficient, in that it does not conform to the Contract Documents, or does not meet the requirements of any inspection, reference standard, test or approval referred to in the Contract Documents, or has been damaged prior to ENGINEER's recommendation of final payment (unless responsibility for the protection thereof has been assumed by OWNER at Substantial Completion in accordance with paragraph 14.8 or 14.10).

1.15. *Drawings*—The drawings which show the scope, extent and character of the Work to be furnished and performed by CONTRACTOR and which have been prepared or approved by ENGINEER and are referred to in the Contract Documents. Shop drawings are not Drawings as so defined.

1.16. *Effective Date of the Agreement*—The date indicated in the Agreement on which it becomes effective, but if no such date is indicated it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.

1.17. *ENGINEER*—The person, firm or corporation named as such in the Agreement.

1.18. *ENGINEER's Consultant*—A person, firm or corporation having a contract with ENGINEER to furnish services as ENGINEER's independent professional associate or consultant with respect to the Project and who is identified as such in the Supplementary Conditions.

1.19. *Field Order*—A written order issued by ENGINEER which orders minor changes in the Work in accordance with paragraph 9.5 but which does not involve a change in the Contract Price or the Contract Times.

1.20. *General Requirements*—Sections of Division I of the Specifications.

1.21. *Hazardous Waste*—The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.

1.22. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, rules, regulations, ordinances, codes and orders of any and all governmental bodies, agencies, authorities and courts having jurisdiction.

1.23. *Liens*—Liens, charges, security interests or encumbrances upon real property or personal property.

1.24. *Milestone*—A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.

1.25. *Notice of Award*—The written notice by OWNER to the apparent successful bidder stating that upon compliance by the apparent successful bidder with the conditions precedent enumerated therein, within the time specified, OWNER will sign and deliver the Agreement.

1.26. *Notice to Proceed*—A written notice given by OWNER to CONTRACTOR (with a copy to ENGINEER) fixing the date on which the Contract Times will commence to run and on which CONTRACTOR shall start to perform CONTRACTOR's obligations under the Contract Documents.

1.27. *OWNER*—The public body or authority, corporation, association, firm or person with whom CONTRACTOR has entered into the Agreement and for whom the Work is to be provided.

1.28. *Partial Utilization*—Use by OWNER of a substantially completed part of the Work for the purpose for which it is intended (or a related purpose) prior to Substantial Completion of all the Work.

1.29. *PCBs*—Polychlorinated biphenyls.

1.30. *Petroleum*—Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Wastes and crude oils.

1.31. *Project*—The total construction of which the Work to be provided under the Contract Documents may be the whole, or a part as indicated elsewhere in the Contract Documents.

1.32. *Radioactive Material*—Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.

1.33. *Resident Project Representative*—The authorized representative of ENGINEER who may be assigned to the site or any part thereof.

1.34. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.

1.35. *Shop Drawings*—All drawings, diagrams, illustrations, schedules and other data or information which are specifically prepared or assembled by or for CONTRACTOR and submitted by CONTRACTOR to illustrate some portion of the Work.

1.36. *Specifications*—Those portions of the Contract Documents consisting of written technical descriptions of materials, equipment, construction systems, standards and workmanship as applied to the Work and certain administrative details applicable thereto.

1.37. *Subcontractor*—An individual, firm or corporation having a direct contract with CONTRACTOR or with any other Subcontractor for the performance of a part of the Work at the site.

1.38. *Substantial Completion*—The Work (or a specified part thereof) has progressed to the point where, in the opinion of ENGINEER as evidenced by ENGINEER's definitive certificate of Substantial Completion, it is sufficiently complete, in accordance with the Contract Documents, so that the Work (or specified part) can be utilized for the purposes for which it is intended; or if no such certificate is issued, when the Work is complete and ready for final payment as evidenced by ENGINEER's written recommendation of final payment in accordance with paragraph 14.13. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion thereof.

1.39. *Supplementary Conditions*—The part of the Contract Documents which amends or supplements these General Conditions.

1.40. *Supplier*—A manufacturer, fabricator, supplier, distributor, materialman or vendor having a direct contract with CONTRACTOR or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by CONTRACTOR or any Subcontractor.

1.41. *Underground Facilities*—All pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels or other such facilities or attachments, and any encasements containing such facilities which have been installed underground to furnish any of the following services or materials: electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, sewage and drainage removal, traffic or other control systems or water.

1.42. *Unit Price Work*—Work to be paid for on the basis of unit prices.

1.43. *Work*—The entire completed construction or the various separately identifiable parts thereof required to be furnished under the Contract Documents. Work includes and is the result of performing or furnishing labor and furnishing and incorporating materials and equipment into the construction, and performing or furnishing services and furnishing documents, all as required by the Contract Documents.

1.44. *Work Change Directive*—A written directive to CONTRACTOR, issued on or after the Effective Date of the Agreement and signed by OWNER and recommended by ENGINEER, ordering an addition, deletion or revision in the Work, or responding to differing or unforeseen physical conditions under which the Work is to be performed as provided in paragraph 4.2 or 4.3 or to emergencies under paragraph 6.23. A Work Change Directive will not change the Contract Price or the Contract Times, but is evidence that the parties expect that the change directed or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times as provided in paragraph 10.2.

1.45. *Written Amendment*—A written amendment of the Contract Documents, signed by OWNER and CONTRACTOR on or after the Effective Date of the Agreement and normally dealing with the nonengineering or nontechnical rather than strictly construction-related aspects of the Contract Documents.

ARTICLE 2—PRELIMINARY MATTERS

Delivery of Bonds:

2.1. When CONTRACTOR delivers the executed Agreements to OWNER, CONTRACTOR shall also deliver to OWNER such Bonds as CONTRACTOR may be required to furnish in accordance with paragraph 5.1.

Copies of Documents:

2.2. OWNER shall furnish to CONTRACTOR up to ten copies (unless otherwise specified in the Supplementary Conditions) of the Contract Documents as are reasonably necessary for the execution of the Work. Additional copies will be furnished, upon request, at the cost of reproduction.

Commencement of Contract Times; Notice to Proceed:

2.3. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Agreement, or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within thirty days after the Effective Date of the Agreement. In no event will the

Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Agreement, whichever date is earlier.

Starting the Work:

2.4. CONTRACTOR shall start to perform the Work on the date when the Contract Times commence to run, but no Work shall be done at the site prior to the date on which the Contract Times commence to run.

Before Starting Construction:

2.5. Before undertaking each part of the Work, CONTRACTOR shall carefully study and compare the Contract Documents and check and verify pertinent figures shown thereon and all applicable field measurements. CONTRACTOR shall promptly report in writing to ENGINEER any conflict, error, ambiguity or discrepancy which CONTRACTOR may discover and shall obtain a written interpretation or clarification from ENGINEER before proceeding with any Work affected thereby; however, CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to report any conflict, error, ambiguity or discrepancy in the Contract Documents, unless CONTRACTOR knew or reasonably should have known thereof.

2.6. Within ten days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), CONTRACTOR shall submit to ENGINEER for review:

2.6.1. a preliminary progress schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract Documents;

2.6.2. a preliminary schedule of Shop Drawing and Sample submittals which will list each required submittal and the times for submitting, reviewing and processing such submittal;

2.6.3. a preliminary schedule of values for all of the Work which will include quantities and prices of items aggregating the Contract Price and will subdivide the Work into component parts in sufficient detail to serve as the basis for progress payments during construction. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.7. Before any Work at the site is started, CONTRACTOR and OWNER shall each deliver to the other, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance which either of them or any additional insured may reasonably request) which CONTRACTOR and OWNER respectively are required to purchase and maintain in accordance with paragraphs 5.4, 5.6 and 5.7.

Preconstruction Conference:

2.8. Within twenty days after the Contract Times start to run, but before any Work at the site is started, a conference

attended by CONTRACTOR, ENGINEER and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in paragraph 2.6, procedures for handling Shop Drawings and other submittals, processing Applications for Payment and maintaining required records.

Initially Acceptable Schedules:

2.9. Unless otherwise provided in the Contract Documents, at least ten days before submission of the first Application for Payment a conference attended by CONTRACTOR, ENGINEER and others as appropriate will be held to review for acceptability to ENGINEER as provided below the schedules submitted in accordance with paragraph 2.6. CONTRACTOR shall have an additional ten days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to CONTRACTOR until the schedules are submitted to and acceptable to ENGINEER as provided below. The progress schedule will be acceptable to ENGINEER as providing an orderly progression of the Work to completion within any specified Milestones and the Contract Times, but such acceptance will neither impose on ENGINEER responsibility for the sequencing, scheduling or progress of the Work nor interfere with or relieve CONTRACTOR from CONTRACTOR's full responsibility therefor. CONTRACTOR's schedule of Shop Drawing and Sample submissions will be acceptable to ENGINEER as providing a workable arrangement for reviewing and processing the required submittals. CONTRACTOR's schedule of values will be acceptable to ENGINEER as to form and substance.

ARTICLE 3—CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

Intent:

3.1. The Contract Documents comprise the entire agreement between OWNER and CONTRACTOR concerning the Work. The Contract Documents are complementary; what is called for by one is as binding as if called for by all. The Contract Documents will be construed in accordance with the law of the place of the Project.

3.2. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any Work, materials or equipment that may reasonably be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the intended result will be furnished and performed whether or not specifically called for. When words or phrases which have a well-known technical or construction industry or trade meaning are used to describe Work, materials or equipment, such words or phrases shall be interpreted in accordance with that meaning. Clarifi-

cations and interpretations of the Contract Documents shall be issued by ENGINEER as provided in paragraph 9.4.

3.3. Reference to Standards and Specifications of Technical Societies; Reporting and Resolving Discrepancies:

3.3.1. Reference to standards, specifications, manuals or codes of any technical society, organization or association, or to the Laws or Regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard, specification, manual, code or Laws or Regulations in effect at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.

3.3.2. If, during the performance of the Work, CONTRACTOR discovers any conflict, error, ambiguity or discrepancy within the Contract Documents or between the Contract Documents and any provision of any such Law or Regulation applicable to the performance of the Work or of any such standard, specification, manual or code or of any instruction of any Supplier referred to in paragraph 6.5, CONTRACTOR shall report it to ENGINEER in writing at once, and, CONTRACTOR shall not proceed with the Work affected thereby (except in an emergency as authorized by paragraph 6.23) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in paragraph 3.5 or 3.6; provided, however, that CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to report any such conflict, error, ambiguity or discrepancy unless CONTRACTOR knew or reasonably should have known thereof.

3.3.3. Except as otherwise specifically stated in the Contract Documents or as may be provided by amendment or supplement thereto issued by one of the methods indicated in paragraph 3.5 or 3.6, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity or discrepancy between the provisions of the Contract Documents and:

3.3.3.1. the provisions of any such standard, specification, manual, code or instruction (whether or not specifically incorporated by reference in the Contract Documents); or

3.3.3.2. the provisions of any such Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

No provision of any such standard, specification, manual, code or instruction shall be effective to change the duties and responsibilities of OWNER, CONTRACTOR or ENGINEER, or any of their subcontractors, consultants, agents, or employees from those set forth in the Contract Documents, nor shall it be effective to assign to OWNER, ENGINEER or any of ENGINEER's Consultants, agents or employees any duty or authority to supervise or direct the furnishing or

performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of paragraph 9.13 or any other provision of the Contract Documents.

3.4. Whenever in the Contract Documents the terms "as ordered," "as directed," "as required," "as allowed," "as approved" or terms of like effect or import are used, or the adjectives "reasonable," "suitable," "acceptable," "proper" or "satisfactory" or adjectives of like effect or import are used to describe a requirement, direction, review or judgment of ENGINEER as to the Work, it is intended that such requirement, direction, review or judgment will be solely to evaluate, in general, the completed Work for compliance with the requirements of and information in the Contract Documents and conformance with the design concept of the completed Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective shall not be effective to assign to ENGINEER any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of paragraph 9.13 or any other provision of the Contract Documents.

Amending and Supplementing Contract Documents:

3.5. The Contract Documents may be amended to provide for additions, deletions and revisions in the Work or to modify the terms and conditions thereof in one or more of the following ways:

3.5.1. a formal Written Amendment,

3.5.2. a Change Order (pursuant to paragraph 10.4), or

3.5.3. a Work Change Directive (pursuant to paragraph 10.1).

3.6. In addition, the requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, in one or more of the following ways:

3.6.1. a Field Order (pursuant to paragraph 9.5),

3.6.2. ENGINEER's approval of a Shop Drawing or Sample (pursuant to paragraphs 6.26 and 6.27), or

3.6.3. ENGINEER's written interpretation or clarification (pursuant to paragraph 9.4).

Reuse of Documents:

3.7. CONTRACTOR, and any Subcontractor or Supplier or other person or organization performing or furnishing any of the Work under a direct or indirect contract with OWNER (i) shall not have or acquire any title to or ownership rights in any

of the Drawings, Specifications or other documents (or copies of any thereof) prepared by or bearing the seal of ENGINEER or ENGINEER's Consultant, and (ii) shall not reuse any of such Drawings, Specifications, other documents or copies on extensions of the Project or any other project without written consent of OWNER and ENGINEER and specific written verification or adaption by ENGINEER.

ARTICLE 4—AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; REFERENCE POINTS

Availability of Lands:

4.1. OWNER shall furnish, as indicated in the Contract Documents, the lands upon which the Work is to be performed, rights-of-way and easements for access thereto, and such other lands which are designated for the use of CONTRACTOR. Upon reasonable written request, OWNER shall furnish CONTRACTOR with a correct statement of record legal title and legal description of the lands upon which the Work is to be performed and OWNER's interest therein as necessary for giving notice of or filing a mechanic's lien against such lands in accordance with applicable Laws and Regulations. OWNER shall identify any encumbrances or restrictions not of general application but specifically related to use of lands so furnished with which CONTRACTOR will have to comply in performing the Work. Easements for permanent structures or permanent changes in existing facilities will be obtained and paid for by OWNER, unless otherwise provided in the Contract Documents. If CONTRACTOR and OWNER are unable to agree on entitlement to or the amount or extent of any adjustments in the Contract Price or the Contract Times as a result of any delay in OWNER's furnishing these lands, rights-of-way or easements, CONTRACTOR may make a claim therefor as provided in Articles 11 and 12. CONTRACTOR shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

4.2. Subsurface and Physical Conditions:

4.2.1. *Reports and Drawings:* Reference is made to the Supplementary Conditions for identification of:

4.2.1.1. *Subsurface Conditions:* Those reports of explorations and tests of subsurface conditions at or contiguous to the site that have been utilized by ENGINEER in preparing the Contract Documents; and

4.2.1.2. *Physical Conditions:* Those drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the site (except Underground Facilities) that have been utilized by ENGINEER in preparing the Contract Documents.

4.2.2. *Limited Reliance by CONTRACTOR Authorized; Technical Data:* CONTRACTOR may rely upon the general accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," CONTRACTOR may not rely upon or make any claim against OWNER, ENGINEER or any of ENGINEER's Consultants with respect to:

4.2.2.1. the completeness of such reports and drawings for CONTRACTOR's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by CONTRACTOR and safety precautions and programs incident thereto, or

4.2.2.2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings, or

4.2.2.3. any CONTRACTOR interpretation of or conclusion drawn from any "technical data" or any such data, interpretations, opinions or information.

4.2.3. *Notice of Differing Subsurface or Physical Conditions:* If CONTRACTOR believes that any subsurface or physical condition at or contiguous to the site that is uncovered or revealed either:

4.2.3.1. is of such a nature as to establish that any "technical data" on which CONTRACTOR is entitled to rely as provided in paragraphs 4.2.1 and 4.2.2 is materially inaccurate, or

4.2.3.2. is of such a nature as to require a change in the Contract Documents, or

4.2.3.3. differs materially from that shown or indicated in the Contract Documents, or

4.2.3.4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents; then

CONTRACTOR shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as permitted by paragraph 6.23), notify OWNER and ENGINEER in writing about such condition. CONTRACTOR shall not further disturb such conditions or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.

4.2.4. *ENGINEER's Review:* ENGINEER will promptly review the pertinent conditions, determine the necessity of OWNER's obtaining additional exploration or tests with respect thereto and advise OWNER in writing (with a copy to CONTRACTOR) of ENGINEER's findings and conclusions.

4.2.5. *Possible Contract Documents Change:* If ENGINEER concludes that a change in the Contract Documents is required as a result of a condition that meets one or more of the categories in paragraph 4.2.3., a Work Change Directive or a Change Order will be issued as provided in Article 10 to reflect and document the consequences of such change.

4.2.6. *Possible Price and Times Adjustments:* An equitable adjustment in the Contract Price or in the Contract Times, or both, will be allowed to the extent that the existence of such uncovered or revealed condition causes an increase or decrease in CONTRACTOR's cost of, or time required for performance of, the Work; subject, however, to the following:

4.2.6.1. such condition must meet any one or more of the categories described in paragraphs 4.2.3.1 through 4.2.3.4, inclusive;

4.2.6.2. a change in the Contract Documents pursuant to paragraph 4.2.5 will not be an automatic authorization of nor a condition precedent to entitlement to any such adjustment;

4.2.6.3. with respect to Work that is paid for on a Unit Price Basis, any adjustment in Contract Price will be subject to the provisions of paragraphs 9.10 and 11.9; and

4.2.6.4. CONTRACTOR shall not be entitled to any adjustment in the Contract Price or Times if;

4.2.6.4.1. CONTRACTOR knew of the existence of such conditions at the time CONTRACTOR made a final commitment to OWNER in respect of Contract Price and Contract Times by the submission of a bid or becoming bound under a negotiated contract; or

4.2.6.4.2. the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test or study of the site and contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for CONTRACTOR prior to CONTRACTOR's making such final commitment; or

4.2.6.4.3. CONTRACTOR failed to give the written notice within the time and as required by paragraph 4.2.3.

If OWNER and CONTRACTOR are unable to agree on entitlement to or as to the amount or length of any such equitable adjustment in the Contract Price or Contract Times, a claim may be made therefor as provided in Articles 11 and 12. However, OWNER, ENGINEER and ENGINEER's Consultants shall not be liable to CONTRACTOR for any claims, costs, losses or damages sustained by CONTRACTOR on or in connection with any other project or anticipated project.

4.3. *Physical Conditions—Underground Facilities:*

4.3.1. *Shown or Indicated:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the site is based on

information and data furnished to OWNER or ENGINEER by the owners of such Underground Facilities or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

4.3.1.1. OWNER and ENGINEER shall not be responsible for the accuracy or completeness of any such information or data; and

4.3.1.2. The cost of all of the following will be included in the Contract Price and CONTRACTOR shall have full responsibility for: (i) reviewing and checking all such information and data, (ii) locating all Underground Facilities shown or indicated in the Contract Documents, (iii) coordination of the Work with the owners of such Underground Facilities during construction, and (iv) the safety and protection of all such Underground Facilities as provided in paragraph 6.20 and repairing any damage thereto resulting from the Work.

4.3.2. *Not Shown or Indicated:* If an Underground Facility is uncovered or revealed at or contiguous to the site which was not shown or indicated in the Contract Documents, CONTRACTOR shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by paragraph 6.23), identify the owner of such Underground Facility and give written notice to that owner and to OWNER and ENGINEER. ENGINEER will promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence of the Underground Facility. If ENGINEER concludes that a change in the Contract Documents is required, a Work Change Directive or a Change Order will be issued as provided in Article 10 to reflect and document such consequences. During such time, CONTRACTOR shall be responsible for the safety and protection of such Underground Facility as provided in paragraph 6.20. CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, to the extent that they are attributable to the existence of any Underground Facility that was not shown or indicated in the Contract Documents and that CONTRACTOR did not know of and could not reasonably have been expected to be aware of or to have anticipated. If OWNER and CONTRACTOR are unable to agree on entitlement to or the amount or length of any such adjustment in Contract Price or Contract Times, CONTRACTOR may make a claim therefor as provided in Articles 11 and 12. However, OWNER, ENGINEER and ENGINEER's Consultants shall not be liable to CONTRACTOR for any claims, costs, losses or damages incurred or sustained by CONTRACTOR on or in connection with any other project or anticipated project.

Reference Points:

4.4. OWNER shall provide engineering surveys to establish reference points for construction which in ENGINEER's judgment are necessary to enable CONTRACTOR to proceed with the Work. CONTRACTOR shall be responsible for laying out the Work, shall protect and preserve the established reference points and shall make no changes or relocations

without the prior written approval of OWNER. CONTRACTOR shall report to ENGINEER whenever any reference point is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points by professionally qualified personnel.

4.5. Asbestos, PCBs, Petroleum, Hazardous Waste or Radioactive Material:

4.5.1. OWNER shall be responsible for any Asbestos, PCBs, Petroleum, Hazardous Waste or Radioactive Material uncovered or revealed at the site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work and which may present a substantial danger to persons or property exposed thereto in connection with the Work at the site. OWNER shall not be responsible for any such materials brought to the site by CONTRACTOR, Subcontractor, Suppliers or anyone else for whom CONTRACTOR is responsible.

4.5.2. CONTRACTOR shall immediately: (i) stop all Work in connection with such hazardous condition and in any area affected thereby (except in an emergency as required by paragraph 6.23), and (ii) notify OWNER and ENGINEER (and thereafter confirm such notice in writing). OWNER shall promptly consult with ENGINEER concerning the necessity for OWNER to retain a qualified expert to evaluate such hazardous condition or take corrective action, if any. CONTRACTOR shall not be required to resume Work in connection with such hazardous condition or in any such affected area until after OWNER has obtained any required permits related thereto and delivered to CONTRACTOR special written notice: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (ii) specifying any special conditions under which such Work may be resumed safely. If OWNER and CONTRACTOR cannot agree as to entitlement to or the amount or extent of an adjustment, if any, in Contract Price or Contract Times as a result of such Work stoppage or such special conditions under which Work is agreed by CONTRACTOR to be resumed, either party may make a claim therefor as provided in Articles 11 and 12.

4.5.3. If after receipt of such special written notice CONTRACTOR does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then OWNER may order such portion of the Work that is in connection with such hazardous condition or in such affected area to be deleted from the Work. If OWNER and CONTRACTOR cannot agree as to entitlement to or the amount or extent of an adjustment, if any, in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a claim therefor as provided in Articles 11 and 12. OWNER may have such deleted portion of the Work performed by OWNER's own forces or others in accordance with Article 7.

4.5.4. To the fullest extent permitted by Laws and Regulations, OWNER shall indemnify and hold harmless CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's

Consultants and the officers, directors, employees, agents, other consultants and subcontractors of each and any of them from and against all claims, costs, losses and damages arising out of or resulting from such hazardous condition, provided that: (i) any such claim, cost, loss or damage is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom, and (ii) nothing in this subparagraph 4.5.4 shall obligate OWNER to indemnify any person or entity from and against the consequences of that person's or entity's own negligence.

4.5.5. The provisions of paragraphs 4.2 and 4.3 are not intended to apply to Asbestos, PCBs, Petroleum, Hazardous Waste or Radioactive Material uncovered or revealed at the site.

ARTICLE 5—BONDS AND INSURANCE

Performance, Payment and Other Bonds:

5.1. CONTRACTOR shall furnish Performance and Payment Bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all CONTRACTOR's obligations under the Contract Documents. These Bonds shall remain in effect at least until one year after the date when final payment becomes due, except as provided otherwise by Laws or Regulations or by the Contract Documents. CONTRACTOR shall also furnish such other Bonds as are required by the Supplementary Conditions. All Bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Audit Staff, Bureau of Government Financial Operations, U.S. Treasury Department. All Bonds signed by an agent must be accompanied by a certified copy of such agent's authority to act.

5.2. If the surety on any Bond furnished by CONTRACTOR is declared a bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of paragraph 5.1, CONTRACTOR shall within ten days thereafter substitute another Bond and surety, both of which must be acceptable to OWNER.

5.3. Licensed Sureties and Insurers; Certificates of Insurance:

5.3.1. All Bonds and insurance required by the Contract Documents to be purchased and maintained by OWNER or CONTRACTOR shall be obtained from surety or insurance

companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue Bonds or insurance policies for the limits and coverages so required. Such surety and insurance companies shall also meet such additional requirements and qualifications as may be provided in the Supplementary Conditions.

5.3.2. CONTRACTOR shall deliver to OWNER, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by OWNER or any other additional insured) which CONTRACTOR is required to purchase and maintain in accordance with paragraph 5.4. OWNER shall deliver to CONTRACTOR, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by CONTRACTOR or any other additional insured) which OWNER is required to purchase and maintain in accordance with paragraphs 5.6 and 5.7 hereof.

CONTRACTOR's Liability Insurance:

5.4. CONTRACTOR shall purchase and maintain such liability and other insurance as is appropriate for the Work being performed and furnished and as will provide protection from claims set forth below which may arise out of or result from CONTRACTOR's performance and furnishing of the Work and CONTRACTOR's other obligations under the Contract Documents, whether it is to be performed or furnished by CONTRACTOR, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform or furnish any of the Work, or by anyone for whose acts any of them may be liable:

5.4.1. claims under workers' compensation, disability benefits and other similar employee benefit acts;

5.4.2. claims for damages because of bodily injury, occupational sickness or disease, or death of CONTRACTOR's employees;

5.4.3. claims for damages because of bodily injury, sickness or disease, or death of any person other than CONTRACTOR's employees;

5.4.4. claims for damages insured by customary personal injury liability coverage which are sustained: (i) by any person as a result of an offense directly or indirectly related to the employment of such person by CONTRACTOR, or (ii) by any other person for any other reason;

5.4.5. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and

5.4.6. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.

The policies of insurance so required by this paragraph 5.4 to be purchased and maintained shall:

5.4.7. with respect to insurance required by paragraphs 5.4.3 through 5.4.6 inclusive, include as additional insureds (subject to any customary exclusion in respect of professional liability) OWNER, ENGINEER, ENGINEER's Consultants and any other persons or entities identified in the Supplementary Conditions, all of whom shall be listed as additional insureds, and include coverage for the respective officers and employees of all such additional insureds;

5.4.8. include the specific coverages and be written for not less than the limits of liability provided in the Supplementary Conditions or required by Laws or Regulations, whichever is greater;

5.4.9. include completed operations insurance;

5.4.10. include contractual liability insurance covering CONTRACTOR's indemnity obligations under paragraphs 6.12, 6.16 and 6.31 through 6.33;

5.4.11. contain a provision or endorsement that the coverage afforded will not be cancelled, materially changed or renewal refused until at least thirty days prior written notice has been given to OWNER and CONTRACTOR and to each other additional insured identified in the Supplementary Conditions to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the CONTRACTOR pursuant to paragraph 5.3.2 will so provide);

5.4.12. remain in effect at least until final payment and at all times thereafter when CONTRACTOR may be correcting, removing or replacing defective Work in accordance with paragraph 13.12; and

5.4.13. with respect to completed operations insurance, and any insurance coverage written on a claims-made basis, remain in effect for at least two years after final payment (and CONTRACTOR shall furnish OWNER and each other additional insured identified in the Supplementary Conditions to whom a certificate of insurance has been issued evidence satisfactory to OWNER and any such additional insured of continuation of such insurance at final payment and one year thereafter).

OWNER's Liability Insurance:

5.5. In addition to the insurance required to be provided by CONTRACTOR under paragraph 5.4, OWNER, at OWNER's option, may purchase and maintain at OWNER's expense OWNER's own liability insurance as will protect OWNER against claims which may arise from operations under the Contract Documents.

Property Insurance:

5.6. Unless otherwise provided in the Supplementary Conditions, OWNER shall purchase and maintain property insur-

ance upon the Work at the site in the amount of the full replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:

5.6.1. include the interests of OWNER, CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants and any other persons or entities identified in the Supplementary Conditions, each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured;

5.6.2. be written on a Builder's Risk "all-risk" or open peril or special causes of loss policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework and Work in transit and shall insure against at least the following perils fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage, and such other perils as may be specifically required by the Supplementary Conditions;

5.6.3. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);

5.6.4. cover materials and equipment stored at the site or at another location that was agreed to in writing by OWNER prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by ENGINEER; and

5.6.5. be maintained in effect until final payment is made unless otherwise agreed to in writing by OWNER, CONTRACTOR and ENGINEER with thirty days written notice to each other additional insured to whom a certificate of insurance has been issued.

5.7. OWNER shall purchase and maintain such boiler and machinery insurance or additional property insurance as may be required by the Supplementary Conditions or Laws and Regulations which will include the interests of OWNER, CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants and any other persons or entities identified in the Supplementary Conditions, each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured.

5.8. All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained by OWNER in accordance with paragraphs 5.6 and 5.7 will contain a provision or endorsement that the coverage afforded will not be cancelled or materially changed or renewal refused until at least thirty days' prior written notice has been given to OWNER and CONTRACTOR and to each other additional insured to whom a certificate of insurance has been issued and will contain waiver provisions in accordance with paragraph 5.11.

5.9. OWNER shall not be responsible for purchasing and maintaining any property insurance to protect the interests of CONTRACTOR, Subcontractors or others in the Work to the extent of any deductible amounts that are identified in the Supplementary Conditions. The risk of loss within such identified deductible amount, will be borne by CONTRACTOR, Subcontractor or others suffering any such loss and if any of them wishes property insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser's own expense.

5.10. If CONTRACTOR requests in writing that other special insurance be included in the property insurance policies provided under paragraphs 5.6 or 5.7, OWNER shall, if possible, include such insurance, and the cost thereof will be charged to CONTRACTOR by appropriate Change Order or Written Amendment. Prior to commencement of the Work at the site, OWNER shall in writing advise CONTRACTOR whether or not such other insurance has been procured by OWNER.

5.11. *Waiver of Rights:*

5.11.1. OWNER and CONTRACTOR intend that all policies purchased in accordance with paragraphs 5.6 and 5.7 will protect OWNER, CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants and all other persons or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds in such policies and will provide primary coverage for all losses and damages caused by the perils covered thereby. All such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or additional insureds thereunder. OWNER and CONTRACTOR waive all rights against each other and their respective officers, directors, employees and agents for all losses and damages caused by, arising out of or resulting from any of the perils covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Subcontractors, ENGINEER, ENGINEER's Consultants and all other persons or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by OWNER as trustee or otherwise payable under any policy so issued.

5.11.2. In addition, OWNER waives all rights against CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants and the officers, directors, employees and agents of any of them, for:

5.11.2.1. loss due to business interruption, loss of use or other consequential loss extending beyond direct physical loss or damage to OWNER's property or the Work caused by, arising out of or resulting from fire or other peril, whether or not insured by OWNER; and

5.11.2.2. loss or damage to the completed Project or part thereof caused by, arising out of or resulting from fire or other insured peril covered by any property insurance maintained on the completed Project or part thereof by OWNER during partial utilization pursuant to paragraph 14.10, after substantial completion pursuant to paragraph 14.8 or after final payment pursuant to paragraph 14.13.

Any insurance policy maintained by OWNER covering any loss, damage or consequential loss referred to in this paragraph 5.11.2 shall contain provisions to the effect that in the event of payment of any such loss, damage or consequential loss the insurers will have no rights of recovery against any of CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants and the officers, directors, employees and agents of any of them.

Receipt and Application of Insurance Proceeds

5.12. Any insured loss under the policies of insurance required by paragraphs 5.6 and 5.7 will be adjusted with OWNER and made payable to OWNER as fiduciary for the insureds, as their interests may appear, subject to the requirements of any applicable mortgage clause and of paragraph 5.13. OWNER shall deposit in a separate account any money so received, and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached the damaged Work shall be repaired or replaced, the moneys so received applied on account thereof and the Work and the cost thereof covered by an appropriate Change Order or Written Amendment.

5.13. OWNER as fiduciary shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within fifteen days after the occurrence of loss to OWNER's exercise of this power. If such objection be made, OWNER as fiduciary shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, OWNER as fiduciary shall adjust and settle the loss with the insurers and, if required in writing by any party in interest, OWNER as fiduciary shall give bond for the proper performance of such duties.

Acceptance of Bonds and Insurance; Option to Replace:

5.14. If either party (OWNER or CONTRACTOR) has any objection to the coverage afforded by or other provisions of the Bonds or insurance required to be purchased and maintained by the other party in accordance with Article 5 on the basis of non-conformance with the Contract Documents, the objecting party shall so notify the other party in writing within ten days after receipt of the certificates (or other evidence requested) required by paragraph 2.7. OWNER and CONTRACTOR shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request. If either party does not purchase or maintain all of the Bonds and insurance required of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent Bonds or insurance to protect such other party's interests at the expense of the party who was

required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

Partial Utilization—Property Insurance:

5.15. If OWNER finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work, such use or occupancy may be accomplished in accordance with paragraph 14.10; provided that no such use or occupancy shall commence before the insurers providing the property insurance have acknowledged notice thereof and in writing effected any changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be cancelled or permitted to lapse on account of any such partial use or occupancy.

ARTICLE 6—CONTRACTOR'S RESPONSIBILITIES

Supervision and Superintendence:

6.1. CONTRACTOR shall supervise, inspect and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences and procedures of construction, but CONTRACTOR shall not be responsible for the negligence of others in the design or specification of a specific means, method, technique, sequence or procedure of construction which is shown or indicated in and expressly required by the Contract Documents. CONTRACTOR shall be responsible to see that the completed Work complies accurately with the Contract Documents.

6.2. CONTRACTOR shall keep on the Work at all times during its progress a competent resident superintendent, who shall not be replaced without written notice to OWNER and ENGINEER except under extraordinary circumstances. The superintendent will be CONTRACTOR's representative at the site and shall have authority to act on behalf of CONTRACTOR. All communications to the superintendent shall be as binding as if given to CONTRACTOR.

Labor, Materials and Equipment:

6.3. CONTRACTOR shall provide competent, suitably qualified personnel to survey, lay out and construct the Work as required by the Contract Documents. CONTRACTOR shall at all times maintain good discipline and order at the site. Except as otherwise required for the safety or protection of persons or the Work or property at the site or adjacent thereto, and except as otherwise indicated in the Contract Documents, all Work at the site shall be performed during regular working hours and

CONTRACTOR will not permit overtime work or the performance of Work on Saturday, Sunday or any legal holiday without OWNER's written consent given after prior written notice to ENGINEER.

6.4. Unless otherwise specified in the General Requirements, CONTRACTOR shall furnish and assume full responsibility for all materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities and all other facilities and incidentals necessary for the furnishing, performance, testing, start-up and completion of the Work.

6.5. All materials and equipment shall be of good quality and new, except as otherwise provided in the Contract Documents. All warranties and guarantees specifically called for by the Specifications shall expressly run to the benefit of OWNER. If required by ENGINEER, CONTRACTOR shall furnish satisfactory evidence (including reports of required tests) as to the kind and quality of materials and equipment. All materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned in accordance with instructions of the applicable Supplier, except as otherwise provided in the Contract Documents.

Progress Schedule:

6.6. CONTRACTOR shall adhere to the progress schedule established in accordance with paragraph 2.9 as it may be adjusted from time to time as provided below:

6.6.1. CONTRACTOR shall submit to ENGINEER for acceptance (to the extent indicated in paragraph 2.9) proposed adjustments in the progress schedule that will not change the Contract Times (or Milestones). Such adjustments will conform generally to the progress schedule then in effect and additionally will comply with any provisions of the General Requirements applicable thereto.

6.6.2. Proposed adjustments in the progress schedule that will change the Contract Times (or Milestones) shall be submitted in accordance with the requirements of paragraph 12.1. Such adjustments may only be made by a Change Order or Written Amendment in accordance with Article 12.

6.7. Substitutes and "Or-Equal" Items:

6.7.1. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent or "or-equal" item or no substitution is permitted, other items of material or equipment or material or equipment of other Suppliers may be accepted by ENGINEER under the following circumstances:

6.7.1.1. *"Or-Equal"*: If in ENGINEER's sole discretion an item of material or equipment proposed by CONTRACTOR is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by ENGINEER as an "or-equal" item, in which case review and approval of the proposed item may, in ENGINEER's sole discretion, be accomplished without compliance with some or all of the requirements for acceptance of proposed substitute items.

6.7.1.2. *Substitute Items*: If in ENGINEER's sole discretion an item of material or equipment proposed by CONTRACTOR does not qualify as an "or-equal" item under subparagraph 6.7.1.1, it will be considered a proposed substitute item. CONTRACTOR shall submit sufficient information as provided below to allow ENGINEER to determine that the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefor. The procedure for review by the ENGINEER will include the following as supplemented in the General Requirements and as ENGINEER may decide is appropriate under the circumstances. Requests for review of proposed substitute items of material or equipment will not be accepted by ENGINEER from anyone other than CONTRACTOR. If CONTRACTOR wishes to furnish or use a substitute item of material or equipment, CONTRACTOR shall first make written application to ENGINEER for acceptance thereof, certifying that the proposed substitute will perform adequately the functions and achieve the results called for by the general design, be similar in substance to that specified and be suited to the same use as that specified. The application will state the extent, if any, to which the evaluation and acceptance of the proposed substitute will prejudice CONTRACTOR's achievement of Substantial Completion on time, whether or not acceptance of the substitute for use in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with OWNER for work on the Project) to adapt the design to the proposed substitute and whether or not incorporation or use of the substitute in connection with the Work is subject to payment of any license fee or royalty. All variations of the proposed substitute from that specified will be identified in the application and available maintenance, repair and replacement service will be indicated. The application will also contain an itemized estimate of all costs or credits that will result directly or indirectly from acceptance of such substitute, including costs of redesign and claims of other contractors affected by the resulting change, all of which will be considered by ENGINEER in evaluating the proposed substitute. ENGINEER may require CONTRACTOR to furnish additional data about the proposed substitute.

6.7.1.3. *CONTRACTOR's Expense*: All data to be provided by CONTRACTOR in support of any proposed "or-equal" or substitute item will be at CONTRACTOR's expense.

6.7.2. *Substitute Construction Methods or Procedures*: If a specific means, method, technique, sequence or procedure of

construction is shown or indicated in and expressly required by the Contract Documents, CONTRACTOR may furnish or utilize a substitute means, method, technique, sequence or procedure of construction acceptable to ENGINEER. CONTRACTOR shall submit sufficient information to allow ENGINEER, in ENGINEER's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The procedure for review by ENGINEER will be similar to that provided in subparagraph 6.7.1.2.

6.7.3. *Engineer's Evaluation*: ENGINEER will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to paragraphs 6.7.1.2 and 6.7.2. ENGINEER will be the sole judge of acceptability. No "or-equal" or substitute will be ordered, installed or utilized without ENGINEER's prior written acceptance which will be evidenced by either a Change Order or an approved Shop Drawing. OWNER may require CONTRACTOR to furnish at CONTRACTOR's expense a special performance guarantee or other surety with respect to any "or-equal" or substitute. ENGINEER will record time required by ENGINEER and ENGINEER's Consultants in evaluating substitutes proposed or submitted by CONTRACTOR pursuant to paragraphs 6.7.1.2 and 6.7.2 and in making changes in the Contract Documents (or in the provisions of any other direct contract with OWNER for work on the Project) occasioned thereby. Whether or not ENGINEER accepts a substitute item so proposed or submitted by CONTRACTOR, CONTRACTOR shall reimburse OWNER for the charges of ENGINEER and ENGINEER's Consultants for evaluating each such proposed substitute item.

Concerning Subcontractors, Suppliers and Others:

6.8.1. CONTRACTOR shall not employ any Subcontractor, Supplier or other person or organization (including those acceptable to OWNER and ENGINEER as indicated in paragraph 6.8.2), whether initially or as a substitute, against whom OWNER or ENGINEER may have reasonable objection. CONTRACTOR shall not be required to employ any Subcontractor, Supplier or other person or organization to furnish or perform any of the Work against whom CONTRACTOR has reasonable objection.

6.8.2. If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers or other persons or organizations (including those who are to furnish the principal items of materials or equipment) to be submitted to OWNER in advance of the specified date prior to the Effective Date of the Agreement for acceptance by OWNER and ENGINEER, and if CONTRACTOR has submitted a list thereof in accordance with the Supplementary Conditions, OWNER's or ENGINEER's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the bidding documents or the Contract Documents) of any such Subcontractor, Supplier or other person or organization so identified may be revoked on the basis of reasonable objection after due investigation, in which case CONTRACTOR shall submit an acceptable substitute, the Contract Price will be adjusted by the difference in the cost occasioned by such

substitution and an appropriate Change Order will be issued or Written Amendment signed. No acceptance by OWNER or ENGINEER of any such Subcontractor, Supplier or other person or organization shall constitute a waiver of any right of OWNER or ENGINEER to reject *defective* Work.

6.9.1. CONTRACTOR shall be fully responsible to OWNER and ENGINEER for all acts and omissions of the Subcontractors, Suppliers and other persons and organizations performing or furnishing any of the Work under a direct or indirect contract with CONTRACTOR just as CONTRACTOR is responsible for CONTRACTOR's own acts and omissions. Nothing in the Contract Documents shall create for the benefit of any such Subcontractor, Supplier or other person or organization any contractual relationship between OWNER or ENGINEER and any such Subcontractor, Supplier or other person or organization, nor shall it create any obligation on the part of OWNER or ENGINEER to pay or to see to the payment of any moneys due any such Subcontractor, Supplier or other person or organization except as may otherwise be required by Laws and Regulations.

6.9.2. CONTRACTOR shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers and other persons and organizations performing or furnishing any of the Work under a direct or indirect contract with CONTRACTOR. CONTRACTOR shall require all Subcontractors, Suppliers and such other persons and organizations performing or furnishing any of the Work to communicate with the ENGINEER through CONTRACTOR.

6.10. The divisions and sections of the Specifications and the identifications of any Drawings shall not control CONTRACTOR in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.

6.11. All Work performed for CONTRACTOR by a Subcontractor or Supplier will be pursuant to an appropriate agreement between CONTRACTOR and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of OWNER and ENGINEER. Whenever any such agreement is with a Subcontractor or Supplier who is listed as an additional insured on the property insurance provided in paragraph 5.6 or 5.7, the agreement between the CONTRACTOR and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against OWNER, CONTRACTOR, ENGINEER, ENGINEER's Consultants and all other additional insureds for all losses and damages caused by, arising out of or resulting from any of the perils covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, CONTRACTOR will obtain the same.

Patent Fees and Royalties:

6.12. CONTRACTOR shall pay all license fees and royalties and assume all costs incident to the use in the performance

of the Work or the incorporation in the Work of any invention, design, process, product or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product or device is specified in the Contract Documents for use in the performance of the Work and if to the actual knowledge of OWNER or ENGINEER its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by OWNER in the Contract Documents. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultants and the officers, directors, employees, agents and other consultants of each and any of them from and against all claims, costs, losses and damages arising out of or resulting from any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product or device not specified in the Contract Documents.

Permits:

6.13. Unless otherwise provided in the Supplementary Conditions, CONTRACTOR shall obtain and pay for all construction permits and licenses. OWNER shall assist CONTRACTOR, when necessary, in obtaining such permits and licenses. CONTRACTOR shall pay all governmental charges and inspection fees necessary for the prosecution of the Work, which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. CONTRACTOR shall pay all charges of utility owners for connections to the Work, and OWNER shall pay all charges of such utility owners for capital costs related thereto such as plant investment fees.

Laws and Regulations:

6.14.1. CONTRACTOR shall give all notices and comply with all Laws and Regulations applicable to furnishing and performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither OWNER nor ENGINEER shall be responsible for monitoring CONTRACTOR's compliance with any Laws or Regulations.

6.14.2. If CONTRACTOR performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, CONTRACTOR shall bear all claims, costs, losses and damages caused by, arising out of or resulting therefrom; however, it shall not be CONTRACTOR's primary responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve CONTRACTOR of CONTRACTOR's obligations under paragraph 3.3.2.

Taxes:

6.15. CONTRACTOR shall pay all sales, consumer, use and other similar taxes required to be paid by CONTRACTOR in accordance with the Laws and Regulations of the place of

the Project which are applicable during the performance of the Work.

Use of Premises:

6.16. CONTRACTOR shall confine construction equipment, the storage of materials and equipment and the operations of workers to the site and land and areas identified in and permitted by the Contract Documents and other land and areas permitted by Laws and Regulations, rights-of-way, permits and easements, and shall not unreasonably encumber the premises with construction equipment or other materials or equipment. CONTRACTOR shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof or of any adjacent land or areas, resulting from the performance of the Work. Should any claim be made by any such owner or occupant because of the performance of the Work, CONTRACTOR shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law. CONTRACTOR shall, to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultant and anyone directly or indirectly employed by any of them from and against all claims, costs, losses and damages arising out of or resulting from any claim or action, legal or equitable, brought by any such owner or occupant against OWNER, ENGINEER or any other party indemnified hereunder to the extent caused by or based upon CONTRACTOR's performance of the Work.

6.17. During the progress of the Work, CONTRACTOR shall keep the premises free from accumulations of waste materials, rubbish and other debris resulting from the Work. At the completion of the Work CONTRACTOR shall remove all waste materials, rubbish and debris from and about the premises as well as all tools, appliances, construction equipment and machinery and surplus materials. CONTRACTOR shall leave the site clean and ready for occupancy by OWNER at Substantial Completion of the Work. CONTRACTOR shall restore to original condition all property not designated for alteration by the Contract Documents.

6.18. CONTRACTOR shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall CONTRACTOR subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

Record Documents:

6.19. CONTRACTOR shall maintain in a safe place at the site one record copy of all Drawings, Specifications, Addenda, Written Amendments, Change Orders, Work Change Directives, Field Orders and written interpretations and clarifications (issued pursuant to paragraph 9.4) in good order and annotated to show all changes made during construction. These record documents together with all approved Samples and a counterpart of all approved Shop Drawings will be available to ENGINEER for reference. Upon completion of

the Work, these record documents, Samples and Shop Drawings will be delivered to ENGINEER for OWNER.

Safety and Protection:

6.20. CONTRACTOR shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. CONTRACTOR shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

6.20.1. all persons on the Work site or who may be affected by the Work;

6.20.2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the site; and

6.20.3. other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities and Underground Facilities not designated for removal, relocation or replacement in the course of construction.

CONTRACTOR shall comply with all applicable Laws and Regulations of any public body having jurisdiction for safety of persons or property or to protect them from damage, injury or loss; and shall erect and maintain all necessary safeguards for such safety and protection. CONTRACTOR shall notify owners of adjacent property and of Underground Facilities and utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation and replacement of their property. All damage, injury or loss to any property referred to in paragraph 6.20.2 or 6.20.3 caused, directly or indirectly, in whole or in part, by CONTRACTOR, any Subcontractor, Supplier or any other person or organization directly or indirectly employed by any of them to perform or furnish any of the Work or anyone for whose acts any of them may be liable, shall be remedied by CONTRACTOR (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of OWNER or ENGINEER or ENGINEER's Consultant or anyone employed by any of them or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of CONTRACTOR or any Subcontractor, Supplier or other person or organization directly or indirectly employed by any of them). CONTRACTOR's duties and responsibilities for safety and for protection of the Work shall continue until such time as all the Work is completed and ENGINEER has issued a notice to OWNER and CONTRACTOR in accordance with paragraph 14.13 that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

Safety Representative:

6.21. CONTRACTOR shall designate a qualified and experienced safety representative at the site whose duties and

responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

Hazard Communication Programs:

6.22. CONTRACTOR shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the site in accordance with Laws or Regulations.

Emergencies:

6.23. In emergencies affecting the safety or protection of persons or the Work or property at the site or adjacent thereto, CONTRACTOR, without special instruction or authorization from OWNER or ENGINEER, is obligated to act to prevent threatened damage, injury or loss. CONTRACTOR shall give ENGINEER prompt written notice if CONTRACTOR believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby. If ENGINEER determines that a change in the Contract Documents is required because of the action taken by CONTRACTOR in response to such an emergency, a Work Change Directive or Change Order will be issued to document the consequences of such action.

6.24. Shop Drawings and Samples:

6.24.1. CONTRACTOR shall submit Shop Drawings to ENGINEER for review and approval in accordance with the accepted schedule of Shop Drawings and Sample submittals (see paragraph 2.9). All submittals will be identified as ENGINEER may require and in the number of copies specified in the General Requirements. The data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials and similar data to show ENGINEER the materials and equipment CONTRACTOR proposes to provide and to enable ENGINEER to review the information for the limited purposes required by paragraph 6.26.

6.24.2. CONTRACTOR shall also submit Samples to ENGINEER for review and approval in accordance with said accepted schedule of Shop Drawings and Sample submittals. Each Sample will be identified clearly as to material, Supplier, pertinent data such as catalog numbers and the use for which intended and otherwise as ENGINEER may require to enable ENGINEER to review the submittal for the limited purposes required by paragraph 6.26. The numbers of each Sample to be submitted will be as specified in the Specifications.

6.25. Submittal Procedures:

6.25.1. Before submitting each Shop Drawing or Sample, CONTRACTOR shall have determined and verified:

6.25.1.1. all field measurements, quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers and similar information with respect thereto,

6.25.1.2. all materials with respect to intended use, fabrication, shipping, handling, storage, assembly and installation pertaining to the performance of the Work, and

6.25.1.2. all information relative to CONTRACTOR's sole responsibilities in respect of means, methods, techniques, sequences and procedures of construction and safety precautions and programs incident thereto.

CONTRACTOR shall also have reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents.

6.25.2. Each submittal will bear a stamp or specific written indication that CONTRACTOR has satisfied CONTRACTOR's obligations under the Contract Documents with respect to CONTRACTOR'S review and approval of that submittal.

6.25.3. At the time of each submission, CONTRACTOR shall give ENGINEER specific written notice of such variations, if any, that the Shop Drawing or Sample submitted may have from the requirements of the Contract Documents, such notice to be in a written communication separate from the submittal; and, in addition, shall cause a specific notation to be made on each Shop Drawing and Sample submitted to ENGINEER for review and approval of each such variation.

6.26. ENGINEER will review and approve Shop Drawings and Samples in accordance with the schedule of Shop Drawings and Sample submittals accepted by ENGINEER as required by paragraph 2.9. ENGINEER's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. ENGINEER's review and approval will not extend to means, methods, techniques, sequences or procedures of construction (except where a particular means, method, technique, sequence or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions. CONTRACTOR shall make corrections required by ENGINEER, and shall return the required number of corrected copies of Shop Drawings and submit as required new Samples for review and approval. CONTRACTOR shall direct specific attention in writing to revisions other than the corrections called for by ENGINEER on previous submittals.

6.27. ENGINEER's review and approval of Shop Drawings or Samples shall not relieve CONTRACTOR from responsibility for any variation from the requirements of the Contract

Documents unless CONTRACTOR has in writing called ENGINEER's attention to each such variation at the time of submission as required by paragraph 6.25.3 and ENGINEER has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample approval; nor will any approval by ENGINEER relieve CONTRACTOR from responsibility for complying with the requirements of paragraph 6.25.1.

6.28. Where a Shop Drawing or Sample is required by the Contract Documents or the schedule of Shop Drawings and Sample submissions accepted by ENGINEER as required by paragraph 2.9, any related Work performed prior to ENGINEER's review and approval of the pertinent submittal will be at the sole expense and responsibility of CONTRACTOR.

Continuing the Work:

6.29. CONTRACTOR shall carry on the Work and adhere to the progress schedule during all disputes or disagreements with OWNER. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by paragraph 15.5 or as OWNER and CONTRACTOR may otherwise agree in writing.

6.30. CONTRACTOR's General Warranty and Guarantee:

6.30.1. CONTRACTOR warrants and guarantees to OWNER, ENGINEER and ENGINEER's Consultants that all Work will be in accordance with the Contract Documents and will not be *defective*. CONTRACTOR's warranty and guarantee hereunder excludes defects or damage caused by:

6.30.1.1. abuse, modification or improper maintenance or operation by persons other than CONTRACTOR, Subcontractors or Suppliers; or

6.30.1.2. normal wear and tear under normal usage.

6.30.2. CONTRACTOR's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of CONTRACTOR's obligation to perform the Work in accordance with the Contract Documents:

6.30.2.1. observations by ENGINEER;

6.30.2.3. recommendation of any progress or final payment by ENGINEER;

6.30.2.3. the issuance of a certificate of Substantial Completion or any payment by OWNER to CONTRACTOR under the Contract Documents;

6.30.2.4. use or occupancy of the Work or any part thereof by OWNER;

6.30.2.5. any acceptance by OWNER or any failure to do so;

6.30.2.6. any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by ENGINEER pursuant to paragraph 14.13;

6.30.2.7. any inspection, test or approval by others; or

6.30.2.8. any correction of *defective* Work by OWNER.

Indemnification:

6.31. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultants and the officers, directors, employees, agents and other consultants of each and any of them from and against all claims, costs, losses and damages (including but not limited to all fees and charges of engineers, architects, attorneys and other professionals and all court or arbitration or other dispute resolution costs) caused by, arising out of or resulting from the performance of the Work, provided that any such claim, cost, loss or damage: (i) is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom, and (ii) is caused in whole or in part by any negligent act or omission of CONTRACTOR, any Subcontractor, any Supplier, any person or organization directly or indirectly employed by any of them to perform or furnish any of the Work or anyone for whose acts any of them may be liable, regardless of whether or not caused in part by any negligence or omission of a person or entity indemnified hereunder or whether liability is imposed upon such indemnified party by Laws and Regulations regardless of the negligence of any such person or entity.

6.32. In any and all claims against OWNER or ENGINEER or any of their respective consultants, agents, officers, directors or employees by any employee (or the survivor or personal representative of such employee) of CONTRACTOR, any Subcontractor, any Supplier, any person or organization directly or indirectly employed by any of them to perform or furnish any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under paragraph 6.31 shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for CONTRACTOR or any such Subcontractor, Supplier or other person or organization under workers' compensation acts, disability benefit acts or other employee benefit acts.

6.33. The indemnification obligations of CONTRACTOR under paragraph 6.31 shall not extend to the liability of ENGINEER and ENGINEER's Consultants, officers, directors, employees or agents caused by the professional negligence, errors or omissions of any of them.

Survival of Obligations:

6.34. All representations, indemnifications, warranties and guarantees made in, required by or given in accordance with

the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion and acceptance of the Work and termination or completion of the Agreement.

ARTICLE 7—OTHER WORK

Related Work at Site:

7.1. OWNER may perform other work related to the Project at the site by OWNER's own forces, or let other direct contracts therefor which shall contain General Conditions similar to these, or have other work performed by utility owners. If the fact that such other work is to be performed was not noted in the Contract Documents, then: (i) written notice thereof will be given to CONTRACTOR prior to starting any such other work, and (ii) CONTRACTOR may make a claim therefor as provided in Articles 11 and 12 if CONTRACTOR believes that such performance will involve additional expense to CONTRACTOR or requires additional time and the parties are unable to agree as to the amount or extent thereof.

7.2. CONTRACTOR shall afford each other contractor who is a party to such a direct contract and each utility owner (and OWNER, if OWNER is performing the additional work with OWNER's employees) proper and safe access to the site and a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work and shall properly connect and coordinate the Work with theirs. Unless otherwise provided in the Contract Documents, CONTRACTOR shall do all cutting, fitting and patching of the Work that may be required to make its several parts come together properly and integrate with such other work. CONTRACTOR shall not endanger any work of others by cutting, excavating or otherwise altering their work and will only cut or alter their work with the written consent of ENGINEER and the others whose work will be affected. The duties and responsibilities of CONTRACTOR under this paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of CONTRACTOR in said direct contracts between OWNER and such utility owners and other contractors.

7.3. If the proper execution or results of any part of CONTRACTOR's Work depends upon work performed by others under this Article 7, CONTRACTOR shall inspect such other work and promptly report to ENGINEER in writing any delays, defects or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of CONTRACTOR's Work. CONTRACTOR's failure so to report will constitute an acceptance of such other work as fit and proper for integration with CONTRACTOR's Work except for latent or nonapparent defects and deficiencies in such other work.

Coordination:

7.4. If OWNER contracts with others for the performance of other work on the Project at the site, the following will be set forth in Supplementary Conditions:

7.4.1. the person, firm or corporation who will have authority and responsibility for coordination of the activities among the various prime contractors will be identified;

7.4.2. the specific matters to be covered by such authority and responsibility will be itemized; and

7.4.3. the extent of such authority and responsibilities will be provided.

Unless otherwise provided in the Supplementary Conditions, OWNER shall have sole authority and responsibility in respect of such coordination.

ARTICLE 8—OWNER'S RESPONSIBILITIES

8.1. Except as otherwise provided in these General Conditions, OWNER shall issue all communications to CONTRACTOR through ENGINEER.

8.2. In case of termination of the employment of ENGINEER, OWNER shall appoint an engineer against whom CONTRACTOR makes no reasonable objection, whose status under the Contract Documents shall be that of the former ENGINEER.

8.3. OWNER shall furnish the data required of OWNER under the Contract Documents promptly and shall make payments to CONTRACTOR promptly when they are due as provided in paragraphs 14.4 and 14.13.

8.4. OWNER's duties in respect of providing lands and easements and providing engineering surveys to establish reference points are set forth in paragraphs 4.1 and 4.4. Paragraph 4.2 refers to OWNER's identifying and making available to CONTRACTOR copies of reports of explorations and tests of subsurface conditions at the site and drawings of physical conditions in existing structures at or contiguous to the site that have been utilized by ENGINEER in preparing the Contract Documents.

8.5. OWNER's responsibilities in respect of purchasing and maintaining liability and property insurance are set forth in paragraphs 5.5 through 5.10.

8.6. OWNER is obligated to execute Change Orders as indicated in paragraph 10.4.

8.7. OWNER's responsibility in respect of certain inspections, tests and approvals is set forth in paragraph 13.4.

8.8. In connection with OWNER's right to stop Work or suspend Work, see paragraphs 13.10 and 15.1. Paragraph 15.2 deals with OWNER's right to terminate services of CONTRACTOR under certain circumstances.

8.9. The OWNER shall not supervise, direct or have control or authority over, nor be responsible for, CONTRACTOR's means, methods, techniques, sequences or procedures of construction or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the furnishing or performance of the Work. OWNER will not be responsible for CONTRACTOR's failure to perform or furnish the Work in accordance with the Contract Documents.

8.10. OWNER'S responsibility in respect of undisclosed Asbestos, PCBs, Petroleum, Hazardous Waste or Radioactive Materials uncovered or revealed at the site is set forth in paragraph 4.5.

8.11. If and to the extent OWNER has agreed to furnish CONTRACTOR reasonable evidence that financial arrangements have been made to satisfy OWNER's obligations under the Contract Documents, OWNER's responsibility in respect thereof will be as set forth in the Supplementary Conditions.

ARTICLE 9—ENGINEER'S STATUS DURING CONSTRUCTION

OWNER's Representative:

9.1. ENGINEER will be OWNER's representative during the construction period. The duties and responsibilities and the limitations of authority of ENGINEER as OWNER's representative during construction are set forth in the Contract Documents and shall not be extended without written consent of OWNER and ENGINEER.

Visits to Site:

9.2. ENGINEER will make visits to the site at intervals appropriate to the various stages of construction as ENGINEER deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of CONTRACTOR's executed Work. Based on information obtained during such visits and observations, ENGINEER will endeavor for the benefit of OWNER to determine, in general, if the Work is proceeding in accordance with the Contract Documents. ENGINEER will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. ENGINEER's efforts will be directed toward providing for OWNER a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and on-site observations, ENGINEER will keep OWNER informed of the progress of the Work and will endeavor to guard OWNER against defective Work. ENGINEER's visits and on-site observations are subject to all the limitations on ENGINEER's authority and responsibility set forth in paragraph 9.13, and particularly, but without limitation, during or as a result of ENGINEER's on-site visits or

observations of CONTRACTOR's Work ENGINEER will not supervise, direct, control or have authority over or be responsible for CONTRACTOR's means, methods, techniques, sequences or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the furnishing or performance of the Work.

Project Representative:

9.3. If OWNER and ENGINEER agree, ENGINEER will furnish a Resident Project Representative to assist ENGINEER in providing more continuous observation of the Work. The responsibilities and authority and limitations thereon of any such Resident Project Representative and assistants will be as provided in paragraph 9.13 and in the Supplementary Conditions. If OWNER designates another representative or agent to represent OWNER at the site who is not ENGINEER's Consultant, agent or employee, the responsibilities and authority and limitations thereon of such other person will be as provided in the Supplementary Conditions.

Clarifications and Interpretations:

9.4. ENGINEER will issue with reasonable promptness such written clarifications or interpretations of the requirements of the Contract Documents (in the form of Drawings or otherwise) as ENGINEER may determine necessary, which shall be consistent with the intent of and reasonably inferable from Contract Documents. Such written clarifications and interpretations will be binding on OWNER and CONTRACTOR. If OWNER or CONTRACTOR believes that a written clarification or interpretation justifies an adjustment in the Contract Price or the Contract Times and the parties are unable to agree to the amount or extent thereof, if any, OWNER or CONTRACTOR may make a written claim therefor as provided in Article 11 or Article 12.

Authorized Variations in Work:

9.5. ENGINEER may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. These may be accomplished by a Field Order and will be binding on OWNER and also on CONTRACTOR who shall perform the Work involved promptly. If OWNER or CONTRACTOR believes that a Field Order justifies an adjustment in the Contract Price or the Contract Times and the parties are unable to agree as to the amount or extent thereof, OWNER or CONTRACTOR may make a written claim therefor as provided in Article 11 or 12.

Rejecting Defective Work:

9.6. ENGINEER will have authority to disapprove or reject Work which ENGINEER believes to be defective, or

that ENGINEER believes will not produce a completed Project that conforms to the Contract Documents or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. ENGINEER will also have authority to require special inspection or testing of the Work as provided in paragraph 13.9, whether or not the Work is fabricated, installed or completed.

Shop Drawings, Change Orders and Payments:

9.7. In connection with ENGINEER's authority as to Shop Drawings and Samples, see paragraphs 6.24 through 6.28 inclusive.

9.8. In connection with ENGINEER's authority as to Change Orders, see Articles 10, 11, and 12.

9.9. In connection with ENGINEER's authority as to Applications for Payment, see Article 14.

Determinations for Unit Prices:

9.10. ENGINEER will determine the actual quantities and classifications of Unit Price Work performed by CONTRACTOR. ENGINEER will review with CONTRACTOR the ENGINEER's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). ENGINEER's written decision thereon will be final and binding upon OWNER and CONTRACTOR, unless, within ten days after the date of any such decision, either OWNER or CONTRACTOR delivers to the other and to ENGINEER written notice of intention to appeal from ENGINEER's decision and: (i) an appeal from ENGINEER's decision is taken within the time limits and in accordance with the procedures set forth in Exhibit GC-A, "Dispute Resolution Agreement," entered into between OWNER and CONTRACTOR pursuant to Article 16, or (ii) if no such Dispute Resolution Agreement has been entered into, a formal proceeding is instituted by the appealing party in a forum of competent jurisdiction to exercise such rights or remedies as the appealing party may have with respect to ENGINEER's decision, unless otherwise agreed in writing by OWNER and CONTRACTOR. Such appeal will not be subject to the procedures of paragraph 9.11.

Decisions on Disputes:

9.11. ENGINEER will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. Claims, disputes and other matters relating to the acceptability of the Work or the interpretation of the requirements of the Contract Documents pertaining to the performance and furnishing of the Work and Claims under Articles 11 and 12 in respect of changes in the Contract Price or Contract Times will be referred initially to ENGINEER in writing with a request for a formal decision in accordance with this paragraph. Written notice of each such claim, dispute or other matter will be delivered by the claimant

to ENGINEER and the other party to the Agreement promptly (but in no event later than thirty days) after the start of the occurrence or event giving rise thereto, and written supporting data will be submitted to ENGINEER and the other party within sixty days after the start of such occurrence or event unless ENGINEER allows an additional period of time for the submission of additional or more accurate data in support of such claim, dispute or other matter. The opposing party shall submit any response to ENGINEER and the claimant within thirty days after receipt of the claimant's last submittal (unless ENGINEER allows additional time). ENGINEER will render a formal decision in writing within thirty days after receipt of the opposing party's submittal, if any, in accordance with this paragraph. ENGINEER's written decision on such claim, dispute or other matter will be final and binding upon OWNER and CONTRACTOR unless: (i) an appeal from ENGINEER's decision is taken within the time limits and in accordance with the procedures set forth in EXHIBIT GC-A, "Dispute Resolution Agreement," entered into between OWNER and CONTRACTOR pursuant to Article 16, or (ii) if no such Dispute Resolution Agreement has been entered into, a written notice of intention to appeal from ENGINEER's written decision is delivered by OWNER or CONTRACTOR to the other and to ENGINEER within thirty days after the date of such decision and a formal proceeding is instituted by the appealing party in a forum of competent jurisdiction to exercise such rights or remedies as the appealing party may have with respect to such claim, dispute or other matter in accordance with applicable Laws and Regulations within sixty days of the date of such decision, unless otherwise agreed in writing by OWNER and CONTRACTOR.

9.12. When functioning as interpreter and judge under paragraphs 9.10 and 9.11, ENGINEER will not show partiality to OWNER or CONTRACTOR and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity. The rendering of a decision by ENGINEER pursuant to paragraphs 9.10 or 9.11 with respect to any such claim, dispute or other matter (except any which have been waived by the making or acceptance of final payment as provided in paragraph 14.15) will be a condition precedent to any exercise by OWNER or CONTRACTOR of such rights or remedies as either may otherwise have under the Contract Documents or by Laws or Regulations in respect of any such claim, dispute or other matter pursuant to Article 16.

9.13. Limitations on ENGINEER's Authority and Responsibilities:

9.13.1. Neither ENGINEER's authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by ENGINEER in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise or performance of any authority or responsibility by ENGINEER shall create, impose or give rise to any duty owed by ENGINEER to CONTRACTOR, any Subcontractor, any Supplier, any other person or organization, or to any surety for or employee or agent of any of them.

9.13.2. ENGINEER will not supervise, direct, control or have authority over or be responsible for CONTRACTOR's means, methods, techniques, sequences or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the furnishing or performance of the Work. ENGINEER will not be responsible for CONTRACTOR's failure to perform or furnish the Work in accordance with the Contract Documents.

9.13.3. ENGINEER will not be responsible for the acts or omissions of CONTRACTOR or of any Subcontractor, any Supplier, or of any other person or organization performing or furnishing any of the Work.

9.13.4. ENGINEER's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds and certificates of inspection, tests and approvals and Other documentation required to be delivered by paragraph 14.12 will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests and approvals that the results certified indicate compliance with, the Contract Documents.

9.13.5. The limitations upon authority and responsibility set forth in this paragraph 9.13 shall also apply to ENGINEER's Consultants, Resident Project Representative and assistants.

ARTICLE 10—CHANGES IN THE WORK

10.1. Without invalidating the Agreement and without notice to any surety, OWNER may, at any time or from time to time, order additions, deletions or revisions in the Work. Such additions, deletions or revisions will be authorized by a Written Amendment, a Change Order, or a Work Change Directive. Upon receipt of any such document, CONTRACTOR shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).

10.2. If OWNER and CONTRACTOR are unable to agree as to the extent, if any, of an adjustment in the Contract Price or an adjustment of the Contract Times that should be allowed as a result of a Work Change Directive, a claim may be made therefor as provided in Article 11 or Article 12.

10.3. CONTRACTOR shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any Work performed that is not required by the Contract Documents as amended, modified and supplemented as provided in paragraphs 3.5 and 3.6 except in the case of an emergency as provided in paragraph 6.23 or in the case of uncovering Work as provided in paragraph 13.9.

10.4. OWNER and CONTRACTOR shall execute appropriate Change Orders recommended by ENGINEER (or Written Amendments) covering:

10.4.1. changes in the Work which are (i) ordered by OWNER pursuant to paragraph 10.1, (ii) required because of acceptance of *defective* Work under paragraph 13.13 or correcting *defective* Work under paragraph 13.14, or (iii) agreed to by the parties;

10.4.2. changes in the Contract Price or Contract Times which are agreed to by the parties; and

10.4.3. changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by ENGINEER pursuant to paragraph 9.11;

provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, CONTRACTOR shall carry on the Work and adhere to the progress schedule as provided in paragraph 6.29.

10.5. If notice of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times) is required by the provisions of any Bond to be given to a surety, the giving of any such notice will be CONTRACTOR's responsibility, and the amount of each applicable Bond will be adjusted accordingly.

ARTICLE 11—CHANGE OF CONTRACT PRICE

11.1. The Contract Price constitutes the total compensation (subject to authorized adjustments) payable to CONTRACTOR for performing the Work. All duties, responsibilities and obligations assigned to or undertaken by CONTRACTOR shall be at CONTRACTOR's expense without change in the Contract Price.

11.2. The Contract Price may only be changed by a Change Order or by a Written Amendment. Any claim for an adjustment in the Contract Price shall be based on written notice delivered by the party making the claim to the other party and to ENGINEER promptly (but in no event later than thirty days) after the start of the occurrence or event giving rise to the claim and stating the general nature of the claim. Notice of the amount of the claim with supporting data shall be delivered within sixty days after the start of such occurrence or event (unless ENGINEER allows additional time for claimant to submit additional or more accurate data in support of the claim) and shall be accompanied by claimant's written statement that the adjustment claimed covers all known amounts to which the claimant is entitled as a result of said occurrence or event. All claims for adjustment in the Contract Price shall be determined by ENGINEER in accordance with paragraph 9.11 if OWNER and CONTRACTOR cannot otherwise agree on the amount involved. No claim for an adjustment in the Contract Price will

be valid if not submitted in accordance with this paragraph 11.2.

11.3. The value of any Work covered by a Change Order or of any claim for an adjustment in the Contract Price will be determined as follows:

11.3.1. where the Work involved is covered by unit prices contained in the Contract Documents, by application of such unit prices to the quantities of the items involved (subject to the provisions of paragraphs 11.9.1 through 11.9.3, inclusive);

11.3.2. where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with paragraph 11.6.2);

11.3.3. where the Work involved is not covered by unit prices contained in the Contract Documents and agreement to a lump sum is not reached under paragraph 11.3.2, on the basis of the Cost of the Work (determined as provided in paragraphs 11.4 and 11.5) plus a CONTRACTOR's fee for overhead and profit (determined as provided in paragraph 11.6).

Cost of the Work:

11.4. The term Cost of the Work means the sum of all costs necessarily incurred and paid by CONTRACTOR in the proper performance of the Work. Except as otherwise may be agreed to in writing by OWNER, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall include only the following items and shall not include any of the costs itemized in paragraph 11.5:

11.4.1. Payroll costs for employees in the direct employ of CONTRACTOR in the performance of the Work under schedules of job classifications agreed upon by OWNER and CONTRACTOR. Such employees shall include without limitation superintendents, foremen and other personnel employed full-time at the site. Payroll costs for employees not employed full-time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits which shall include social security contributions, unemployment, excise and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. The expenses of performing Work after regular working hours, on Saturday, Sunday or legal holidays, shall be included in the above to the extent authorized by OWNER.

11.4.2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to CONTRACTOR unless OWNER deposits funds with CONTRACTOR with which to make payments, in which case the

cash discounts shall accrue to OWNER. All trade discounts, rebates and refunds and returns from sale of surplus materials and equipment shall accrue to OWNER, and CONTRACTOR shall make provisions so that they may be obtained.

11.4.3. Payments made by CONTRACTOR to the Subcontractors for Work performed or furnished by Subcontractors. If required by OWNER, CONTRACTOR shall obtain competitive bids from subcontractors acceptable to OWNER and CONTRACTOR and shall deliver such bids to OWNER who will then determine, with the advice of ENGINEER, which bids, if any, will be accepted. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work Plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as CONTRACTOR's Cost of the Work and fee as provided in paragraphs 11.4, 11.5, 11.6 and 11.7. All subcontracts shall be subject to the other provisions of the Contract Documents insofar as applicable.

11.4.4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys and accountants) employed for services specifically related to the Work.

11.4.5. Supplemental costs including the following:

11.4.5.1. The proportion of necessary transportation, travel and subsistence expenses of CONTRACTOR's employees incurred in discharge of duties connected with the Work.

11.4.5.2. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office and temporary facilities at the site and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost less market value of such items used but not consumed which remain the property of CONTRACTOR.

11.4.5.3. Rentals of all construction equipment and machinery and the parts thereof whether rented from CONTRACTOR or others in accordance with rental agreements approved by OWNER with the advice of ENGINEER, and the costs of transportation, loading, unloading, installation, dismantling and removal thereof—all in accordance with the terms of said rental agreements. The rental of any such equipment, machinery or parts shall cease when the use thereof is no longer necessary for the Work.

11.4.5.4. Sales, consumer, use or similar taxes related to the Work, and for which CONTRACTOR is liable, imposed by Laws and Regulations.

11.4.5.5. Deposits lost for causes other than negligence of CONTRACTOR, any Subcontractor or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.

11.4.5.6. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by CONTRACTOR in connection with the performance and furnishing of the Work (except losses and damages within the deductible amounts of property insurance established by OWNER in accordance with paragraph 5.9), provided they have resulted from causes other than the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of OWNER. No such losses, damages and expenses shall be included in the Cost of the Work for the purpose of determining CONTRACTOR's fee. If, however, any such loss or damage requires reconstruction and CONTRACTOR is placed in charge thereof, CONTRACTOR shall be paid for services a fee proportionate to that stated in paragraph 11.6.2.

11.4.5.7. The cost of utilities, fuel and sanitary facilities at the site.

11.4.5.8. Minor expenses such as telegrams, long distance telephone calls, telephone service at the site, expressage and similar petty cash items in connection with the Work.

11.4.5.9. Cost of premiums for additional Bonds and insurance required because of changes in the Work.

11.5. The term Cost of the Work shall not include any of the following:

11.5.1. Payroll costs and other compensation of CONTRACTOR's officers, executives, principals (of partnership and sole proprietorships), general managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks and other personnel employed by CONTRACTOR whether at the site or in CONTRACTOR's principal or a branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in paragraph 11.4.1 or specifically covered by paragraph 11.4.4—all of which are to be considered administrative costs covered by the CONTRACTOR's fee.

11.5.2. Expenses of CONTRACTOR's principal and branch offices other than CONTRACTOR's office at the site.

11.5.3. Any part of CONTRACTOR's capital expenses, including interest on CONTRACTOR's capital employed for the Work and charges against CONTRACTOR for delinquent payments.

11.5.4. Cost of premiums for all Bonds and for all insurance whether or not CONTRACTOR is required by the Contract Documents to purchase and maintain the same (except for the cost of premiums covered by subparagraph 11.4.5.9 above).

11.5.5. Costs due to the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of *defective* Work, disposal of materials or equipment wrongly supplied and making good any damage to property.

Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in paragraph 11.4.

11.6. The CONTRACTOR's fee allowed to CONTRACTOR for overhead and profit shall be determined as follows:

11.6.1. a mutually acceptable fixed fee; or

11.6.2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:

11.6.2.1. for costs incurred under paragraphs 11.4.1 and 11.4.2, the CONTRACTOR's fee shall be fifteen percent;

11.6.2.2. for costs incurred under paragraph 11.4.3, the CONTRACTOR's fee shall be five percent;

11.6.2.3. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of paragraphs 11.4.1, 11.4.2, 11.4.3 and 11.6.2 is that the Subcontractor who actually performs or furnishes the Work, at whatever tier, will be paid a fee of fifteen percent of the costs incurred by such Subcontractor under paragraphs 11.4.1 and 11.4.2 and that any higher tier Subcontractor and CONTRACTOR will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor;

11.6.2.4. no fee shall be payable on the basis of costs itemized under paragraphs 11.4.4, 11.4.5 and 11.5;

11.6.2.5. the amount of credit to be allowed by CONTRACTOR to OWNER for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in CONTRACTOR's fee by an amount equal to five percent of such net decrease; and

11.6.2.6. when both additions and credits are involved in any one change, the adjustment in CONTRACTOR's fee shall be computed on the basis of the net change in accordance with paragraphs 11.6.2.1 through 11.6.2.5, inclusive.

11.7. Whenever the cost of any Work is to be determined pursuant to paragraphs 11.4 and 11.5, CONTRACTOR will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in form acceptable to ENGINEER an itemized cost breakdown together with supporting data.

Cash Allowances:

11.8. It is understood that CONTRACTOR has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be furnished and performed for such sums as may be acceptable to OWNER and ENGINEER. CONTRACTOR agrees that:

11.8.1. the allowances include the cost to CONTRACTOR (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the site, and all applicable taxes; and

11.8.2. CONTRACTOR's costs for unloading and handling on the site, labor, installation costs, overhead, profit and other expenses contemplated for the allowances have been included in the Contract Price and not in the allowances and no demand for additional payment on account of any of the foregoing will be valid.

Prior to final payment, an appropriate Change Order will be issued as recommended by ENGINEER to reflect actual amounts due CONTRACTOR on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

11.9. Unit Price Work:

11.9.1. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the established unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by CONTRACTOR will be made by ENGINEER in accordance with paragraph 9.10.

11.9.2. Each unit price will be deemed to include an amount considered by CONTRACTOR to be adequate to cover CONTRACTOR's overhead and profit for each separately identified item.

11.9.3. OWNER or CONTRACTOR may make a claim for an adjustment in the Contract Price in accordance with Article 11 if:

11.9.3.1. the quantity of any item of Unit Price Work performed by CONTRACTOR differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and

11.9.3.2. there is no corresponding adjustment with respect to any other item of Work; and

11.9.3.3. if CONTRACTOR believes that CONTRACTOR is entitled to an increase in Contract Price as a result

of having incurred additional expense or OWNER believes that OWNER is entitled to a decrease in Contract Price and the parties are unable to agree as to the amount of any such increase or decrease.

ARTICLE 12—CHANGE OF CONTRACT TIMES

12.1. The Contract Times (or Milestones) may only be changed by a Change Order or a Written Amendment. Any claim for an adjustment of the Contract Times (or Milestones) shall be based on written notice delivered by the party making the claim to the other party and to ENGINEER promptly (but in no event later than thirty days) after the occurrence of the event giving rise to the claim and stating the general nature of the claim. Notice of the extent of the claim with supporting data shall be delivered within sixty days after such occurrence (unless ENGINEER allows an additional period of time to ascertain more accurate data in support of the claim) and shall be accompanied by the claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant has reason to believe it is entitled as a result of the occurrence of said event. All claims for adjustment in the Contract Times (or Milestones) shall be determined by ENGINEER in accordance with paragraph 9.11 if OWNER and CONTRACTOR cannot otherwise agree. No claim for an adjustment in the Contract Times (or Milestones) will be valid if not submitted in accordance with the requirements of this paragraph 12.1.

12.2. All time limits stated in the Contract Documents are of the essence of the Agreement.

12.3. Where CONTRACTOR is prevented from completing any part of the Work within the Contract Times (or Milestones) due to delay beyond the control of CONTRACTOR, the Contract Times (or Milestones) will be extended in an amount equal to the time lost due to such delay if a claim is made therefor as provided in paragraph 12.1. Delays beyond the control of CONTRACTOR shall include, but not be limited to, acts or neglect by OWNER, acts or neglect of utility owners or other contractors performing other work as contemplated by Article 7, fires, floods, epidemics, abnormal weather conditions or acts of God. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of CONTRACTOR.

12.4. Where CONTRACTOR is prevented from completing any part of the Work within the Contract Times (or Milestones) due to delay beyond the control of both OWNER and CONTRACTOR, an extension of the Contract Times (or Milestones) in an amount equal to the time lost due to such delay shall be CONTRACTOR's sole and exclusive remedy for such delay. In no event shall OWNER be liable to CONTRACTOR, any Subcontractor, any Supplier, any other person or organization, or to any surety for or employee or agent of any of them, for damages arising out of or resulting from (i) delays caused by or within the control of CONTRACTOR, or (ii)

delays beyond the control of both parties including but not limited to fires, floods, epidemics, abnormal weather conditions, acts of God or acts or neglect by utility owners or other contractors performing other work as contemplated by Article 7.

ARTICLE 13—TESTS AND INSPECTIONS: CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

13.1. *Notice of Defects:* Prompt notice of all *defective* Work of which OWNER or ENGINEER have actual knowledge will be given to CONTRACTOR. All *defective* Work may be rejected, corrected or accepted as provided in this Article 13.

Access to Work:

13.2. OWNER, ENGINEER, ENGINEER's Consultants, other representatives and personnel of OWNER, independent testing laboratories and governmental agencies with jurisdictional interests will have access to the Work at reasonable times for their observation, inspecting and testing. CONTRACTOR shall provide them proper and safe conditions for such access and advise them of CONTRACTOR's site safety procedures and programs so that they may comply therewith as applicable.

Tests and Inspections:

13.3. CONTRACTOR shall give ENGINEER timely notice of readiness of the Work for all required inspections, tests or approvals, and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.

13.4. OWNER shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents except:

13.4.1. for inspections, tests or approvals covered by paragraph 13.5 below;

13.4.2. that costs incurred in connection with tests or inspections conducted pursuant to paragraph 13.9 below shall be paid as provided in said paragraph 13.9; and

13.4.3. as otherwise specifically provided in the Contract Documents.

13.5. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested or approved by an employee or other representative of such public body, CONTRACTOR shall assume full responsibility for arranging and obtaining such inspections, tests or approvals, pay all costs in connection therewith, and furnish ENGINEER the required certificates of inspection, or

approval. CONTRACTOR shall also be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests or approvals required for OWNER's and ENGINEER's acceptance of materials or equipment to be incorporated in the Work, or of materials, mix designs, or equipment submitted for approval prior to CONTRACTOR's purchase thereof for incorporation in the Work.

13.6. If any Work (or the work of others) that is to be inspected, tested or approved is covered by CONTRACTOR without written concurrence of ENGINEER, it must, if requested by ENGINEER, be uncovered for observation.

13.7. Uncovering Work as provided in paragraph 13.6 shall be at CONTRACTOR's expense unless CONTRACTOR has given ENGINEER timely notice of CONTRACTOR's intention to cover the same and ENGINEER has not acted with reasonable promptness in response to such notice.

Uncovering Work:

13.8. If any Work is covered contrary to the written request of ENGINEER, it must, if requested by ENGINEER, be uncovered for ENGINEER's observation and replaced at CONTRACTOR's expense.

13.9. If ENGINEER considers it necessary or advisable that covered Work be observed by ENGINEER or inspected or tested by others, CONTRACTOR, at ENGINEER's request, shall uncover, expose or otherwise make available for observation, inspection or testing as ENGINEER may require, that portion of the Work in question, furnishing all necessary labor, material and equipment. If it is found that such Work is *defective*, CONTRACTOR shall pay all claims, costs, losses and damages caused by, arising out of or resulting from such uncovering, exposure, observation, inspection and testing and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and OWNER shall be entitled to an appropriate decrease in the Contract Price, and, if the parties are unable to agree as to the amount thereof, may make a claim therefor as provided in Article 11. If, however, such Work is not found to be *defective*, CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Times (or Milestones), or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement and reconstruction; and, if the parties are unable to agree as to the amount or extent thereof, CONTRACTOR may make a claim therefor as provided in Articles 11 and 12.

OWNER May Stop the Work:

13.10. If the Work is *defective*, or CONTRACTOR fails to supply sufficient skilled workers or suitable materials or equipment, or fails to furnish or perform the Work in such a way that the completed Work will conform to the Contract Documents, OWNER may order CONTRACTOR to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of OWNER to stop the Work

shall not give rise to any duty on the part of OWNER to exercise this right for the benefit of CONTRACTOR or any surety or other party.

Correction or Removal of Defective Work:

13.11. If required by ENGINEER, CONTRACTOR shall promptly, as directed, either correct all *defective* Work, whether or not fabricated, installed or completed, or, if the Work has been rejected by ENGINEER, remove it from the site and replace it with Work that is not *defective*. CONTRACTOR shall pay all claims, costs, losses and damages caused by or resulting from such correction or removal (including but not limited to all costs of repair or replacement of work of others).

13.12. Correction Period:

13.12.1. If within one year after the date of Substantial Completion or such longer period of time as may be prescribed by Laws or Regulations or by the terms of any applicable special guarantee required by the Contract Documents or by any specific provision of the Contract Documents, any Work is found to be *defective*, CONTRACTOR shall promptly, without cost to OWNER and in accordance with OWNER's written instructions: (i) correct such *defective* Work, or, if it has been rejected by OWNER, remove it from the site and replace it with Work that is not *defective*, and (ii) satisfactorily correct or remove and replace any damage to other Work or the work of others resulting therefrom. If CONTRACTOR does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, OWNER may have the *defective* Work corrected or the rejected Work removed and replaced, and all claims, costs, losses and damages caused by or resulting from such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by CONTRACTOR.

13.12.2. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications or by Written Amendment.

13.12.3. Where *defective* Work (and damage to other Work resulting therefrom) has been corrected, removed or replaced under this paragraph 13.12, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

Acceptance of Defective Work:

13.13. If, instead of requiring correction or removal and replacement of *defective* Work, OWNER (and, prior to ENGINEER's recommendation of final payment, also ENGINEER) prefers to accept it, OWNER may do so. CONTRACTOR shall

pay all claims, costs, losses and damages attributable to OWNER's evaluation of and determination to accept such *defective* Work (such costs to be approved by ENGINEER as to reasonableness). If any such acceptance occurs prior to ENGINEER's recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and OWNER shall be entitled to an appropriate decrease in the Contract Price, and, if the parties are unable to agree as to the amount thereof, OWNER may make a claim therefor as provided in Article 11. If the acceptance occurs after such recommendation, an appropriate amount will be paid by CONTRACTOR to OWNER.

OWNER May Correct Defective Work:

13.14. If CONTRACTOR fails within a reasonable time after written notice from ENGINEER to correct *defective* Work or to remove and replace rejected Work as required by ENGINEER in accordance with paragraph 13.11, or if CONTRACTOR fails to perform the Work in accordance with the Contract Documents, or if CONTRACTOR fails to comply with any other provision of the Contract Documents, OWNER may, after seven days' written notice to CONTRACTOR, correct and remedy any such deficiency. In exercising the rights and remedies under this paragraph OWNER shall proceed expeditiously. In connection with such corrective and remedial action, OWNER may exclude CONTRACTOR from all or part of the site, take possession of all or part of the Work, and suspend CONTRACTOR's services related thereto, take possession of CONTRACTOR's tools, appliances, construction equipment and machinery at the site and incorporate in the Work all materials and equipment stored at the site or for which OWNER has paid CONTRACTOR but which are stored elsewhere. CONTRACTOR shall allow OWNER, OWNER's representatives, agents and employees, OWNER's other contractors and ENGINEER and ENGINEER's Consultants access to the site to enable OWNER to exercise the rights and remedies under this paragraph. All claims, costs, losses and damages incurred or sustained by OWNER in exercising such rights and remedies will be charged against CONTRACTOR and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and OWNER shall be entitled to an appropriate decrease in the Contract Price, and, if the parties are unable to agree as to the amount thereof, OWNER may make a claim therefor as provided in Article 11. Such claims, costs, losses and damages will include but not be limited to all costs of repair or replacement of work of others destroyed or damaged by correction, removal or replacement of CONTRACTOR's *defective* Work. CONTRACTOR shall not be allowed an extension of the Contract Times (or Milestones) because of any delay in the performance of the Work attributable to the exercise by OWNER of OWNER's rights and remedies hereunder.

ARTICLE 14—PAYMENTS TO CONTRACTOR AND COMPLETION

Schedule of Values:

14.1. The schedule of values established as provided in paragraph 2.9 will serve as the basis for progress payments and

will be incorporated into a form of Application for Payment acceptable to ENGINEER. Progress payments on account of Unit Price Work will be based on the number of units completed.

Application for Progress Payment:

14.2. At least twenty days before the date established for each progress payment (but not more often than once a month), CONTRACTOR shall submit to ENGINEER for review an Application for Payment filled out and signed by CONTRACTOR covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice or other documentation warranting that OWNER has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance and other arrangements to protect OWNER's interest therein, all of which will be satisfactory to OWNER. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

CONTRACTOR's Warranty of Title:

14.3. CONTRACTOR warrants and guarantees that title to all Work, materials and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to OWNER no later than the time of payment free and clear of all Liens.

Review of Applications for Progress Payment:

14.4. ENGINEER will, within ten days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to OWNER, or return the Application to CONTRACTOR indicating in writing ENGINEER's reasons for refusing to recommend payment. In the latter case, CONTRACTOR may make the necessary corrections and resubmit the Application. Ten days after presentation of the Application for Payment to OWNER with ENGINEER's recommendation, the amount recommended will (subject to the provisions of the last sentence of paragraph 14.7) become due and when due will be paid by OWNER to CONTRACTOR.

14.5. ENGINEER's recommendation of any payment requested in an Application for Payment will constitute a representation by ENGINEER to OWNER, based on ENGINEER's on-site observations of the executed Work as an experienced and qualified design professional and on ENGINEER's review of the Application for Payment and the accompanying data and schedules, that to the best of ENGINEER's knowledge, information and belief:

14.5.1. the Work has progressed to the point indicated,

14.5.2. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents, to a final determination of quantities and classifications for Unit Price Work under paragraph 9.10, and to any other qualifications stated in the recommendation), and

14.5.3. the conditions precedent to CONTRACTOR's being entitled to such payment appear to have been fulfilled in so far as it is ENGINEER's responsibility to observe the Work.

However, by recommending any such payment ENGINEER will not thereby be deemed to have represented that: (i) exhaustive or continuous on-site inspections have been made to check the quality or the quantity of the Work beyond the responsibilities specifically assigned to ENGINEER in the Contract Documents or (ii) that there may not be other matters or issues between the parties that might entitle CONTRACTOR to be paid additionally by OWNER or entitle OWNER to withhold payment to CONTRACTOR.

14.6. ENGINEER's recommendation of any payment, including final payment, shall not mean that ENGINEER is responsible for CONTRACTOR's means, methods, techniques, sequences or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the furnishing or performance of Work, or for any failure of CONTRACTOR to perform or furnish Work in accordance with the Contract Documents.

14.7. ENGINEER may refuse to recommend the whole or any part of any payment if, in ENGINEER's opinion, it would be incorrect to make the representations to OWNER referred to in paragraph 14.5. ENGINEER may also refuse to recommend any such payment, or, because of subsequently discovered evidence or the results of subsequent inspections or tests, nullify any such payment previously recommended, to such extent as may be necessary in ENGINEER's opinion to protect OWNER from loss because:

14.7.1. the Work is *defective*, or completed Work has been damaged requiring correction or replacement,

14.7.2. the Contract Price has been reduced by Written Amendment or Change Order,

14.7.3. OWNER has been required to correct *defective* Work or complete Work in accordance with paragraph 13.14, or

14.7.4. ENGINEER has actual knowledge of the occurrence of any of the events enumerated in paragraphs 15.2.1 through 15.2.4 inclusive.

OWNER may refuse to make payment of the full amount recommended by ENGINEER because:

14.7.5. claims have been made against OWNER on account of CONTRACTOR's performance or furnishing of the Work,

14.7.6. Liens have been filed in connection with the Work, except where CONTRACTOR has delivered a specific Bond satisfactory to OWNER to secure the satisfaction and discharge of such Liens,

14.7.7. there are other items entitling OWNER to a set-off against the amount recommended, or

14.7.8. OWNER has actual knowledge of the occurrence of any of the events enumerated in paragraphs 14.7.1 through 14.7.3 or paragraphs 15.2.1 through 15.2.4 inclusive;

but OWNER must give CONTRACTOR immediate written notice (with a copy to ENGINEER) stating the reasons for such action and promptly pay CONTRACTOR the amount so withheld, or any adjustment thereto agreed to by OWNER and CONTRACTOR, when CONTRACTOR corrects to OWNER's satisfaction the reasons for such action.

Substantial Completion:

14.8. When CONTRACTOR considers the entire Work ready for its intended use CONTRACTOR shall notify OWNER and ENGINEER in writing that the entire Work is substantially complete (except for items specifically listed by CONTRACTOR as incomplete) and request that ENGINEER issue a certificate of Substantial Completion. Within a reasonable time thereafter, OWNER, CONTRACTOR and ENGINEER shall make an inspection of the Work to determine the status of completion. If ENGINEER does not consider the Work substantially complete, ENGINEER will notify CONTRACTOR in writing giving the reasons therefor. If ENGINEER considers the Work substantially complete, ENGINEER will prepare and deliver to OWNER a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. OWNER shall have seven days after receipt of the tentative certificate during which to make written objection to ENGINEER as to any provisions of the certificate or attached list. If, after considering such objections, ENGINEER concludes that the Work is not substantially complete, ENGINEER will within fourteen days after submission of the tentative certificate to OWNER notify CONTRACTOR in writing, stating the reasons therefor. If, after consideration of OWNER's objections, ENGINEER considers the Work substantially complete, ENGINEER will within said fourteen days execute and deliver to OWNER and CONTRACTOR a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as ENGINEER believes justified after consideration of any objections from OWNER. At the time of delivery of the tentative certificate of Substantial Completion ENGINEER will deliver to OWNER and CONTRACTOR a written recommendation as to division of responsibilities pending final payment between OWNER and CONTRACTOR with respect to security, operation, safety, maintenance, heat, utilities, insurance and warranties and guarantees. Unless OWNER and CONTRACTOR agree otherwise in writing and so inform

ENGINEER in writing prior to ENGINEER's issuing the definitive certificate of Substantial Completion, ENGINEER's aforesaid recommendation will be binding on OWNER and CONTRACTOR until final payment.

14.9. OWNER shall have the right to exclude CONTRACTOR from the Work after the date of Substantial Completion, but OWNER shall allow CONTRACTOR reasonable access to complete or correct items on the tentative list.

Partial Utilization:

14.10. Use by OWNER at OWNER's option of any substantially completed part of the Work which: (i) has specifically been identified in the Contract Documents, or (ii) OWNER, ENGINEER and CONTRACTOR agree constitutes a separately functioning and usable part of the Work that can be used by OWNER for its intended purpose without significant interference with CONTRACTOR's performance of the remainder of the Work, may be accomplished prior to Substantial Completion of all the Work subject to the following:

14.10.1. OWNER at any time may request CONTRACTOR in writing to permit OWNER to use any such part of the Work which OWNER believes to be ready for its intended use and substantially complete. If CONTRACTOR agrees that such part of the Work is substantially complete, CONTRACTOR will certify to OWNER and ENGINEER that such part of the Work is substantially complete and request ENGINEER to issue a certificate of Substantial Completion for that part of the Work. CONTRACTOR at any time may notify OWNER and ENGINEER in writing that CONTRACTOR considers any such part of the Work ready for its intended use and substantially complete and request ENGINEER to issue a certificate of Substantial Completion for that part of the Work. Within a reasonable time after either such request, OWNER, CONTRACTOR and ENGINEER shall make an inspection of that part of the Work to determine its status of completion. If ENGINEER does not consider that part of the Work to be substantially complete, ENGINEER will notify OWNER and CONTRACTOR in writing giving the reasons therefor. If ENGINEER considers that part of the Work to be substantially complete, the provisions of paragraphs 14.8 and 14.9 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

14.10.2. No occupancy or separate operation of part of the Work will be accomplished prior to compliance with the requirements of paragraph 5.15 in respect of property insurance.

Final Inspection:

14.11. Upon written notice from CONTRACTOR that the entire Work or an agreed portion thereof is complete, ENGINEER will make a final inspection with OWNER and CONTRACTOR and will notify CONTRACTOR in writing of all

particulars in which this inspection reveals that the Work is incomplete or defective. CONTRACTOR shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

Final Application for Payment:

14.12. After CONTRACTOR has completed all such corrections to the satisfaction of ENGINEER and delivered in accordance with the Contract Documents all maintenance and operating instructions, schedules, guarantees, Bonds, certificates or other evidence of insurance required by paragraph 5.4, certificates of inspection, marked-up record documents (as provided in paragraph 6.19) and other documents, CONTRACTOR may make application for final payment following the procedure for progress payments. The final Application for Payment shall be accompanied (except as previously delivered) by: (i) all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by subparagraph 5.4.13, (ii) consent of the surety, if any, to final payment, and (iii) complete and legally effective releases or waivers (satisfactory to OWNER) of all Liens arising out of or filed in connection with the Work. In lieu of such releases or waivers of Liens and as approved by OWNER, CONTRACTOR may furnish receipts or releases in full and an affidavit of CONTRACTOR that: (i) the releases and receipts include all labor, services, material and equipment for which a Lien could be filed, and (ii) all payrolls, material and equipment bills and other indebtedness connected with the Work for which OWNER or OWNER's property might in any way be responsible have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, CONTRACTOR may furnish a Bond or other collateral satisfactory to OWNER to indemnify OWNER against any Lien.

Final Payment and Acceptance:

14.13. If, on the basis of ENGINEER's observation of the Work during construction and final inspection, and ENGINEER's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, ENGINEER is satisfied that the Work has been completed and CONTRACTOR's other obligations under the Contract Documents have been fulfilled, ENGINEER will, within ten days after receipt of the final Application for Payment, indicate in writing ENGINEER's recommendation of payment and present the Application to OWNER for payment. At the same time ENGINEER will also give written notice to OWNER and CONTRACTOR that the Work is acceptable subject to the provisions of paragraph 14.15. Otherwise, ENGINEER will return the Application to CONTRACTOR, indicating in writing the reasons for refusing to recommend final payment, in which case CONTRACTOR shall make the necessary corrections and resubmit the Application. Thirty days after the presentation to OWNER of the Application and accompanying documentation, in appropriate form and substance and with ENGINEER's recommendation and notice of acceptability, the amount recommended by ENGINEER will become due and will be paid by OWNER to

CONTRACTOR.

14.14. If, through no fault of CONTRACTOR, final completion of the Work is significantly delayed and if ENGINEER so confirms, OWNER shall, upon receipt of CONTRACTOR's final Application for Payment and recommendation of ENGINEER, and without terminating the Agreement, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by OWNER for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if Bonds have been furnished as required in paragraph 5.1, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by CONTRACTOR to ENGINEER with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

Waiver of Claims:

14.15. The making and acceptance of final payment will constitute:

14.15.1. a waiver of all claims by OWNER against CONTRACTOR, except claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to paragraph 14.11, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from CONTRACTOR's continuing obligations under the Contract Documents; and

14.15.2. a waiver of all claims by CONTRACTOR against OWNER other than those previously made in writing and still unsettled.

ARTICLE 15—SUSPENSION OF WORK AND TERMINATION

OWNER May Suspend Work:

15.1. At any time and without cause, OWNER may suspend the Work or any portion thereof for a period of not more than ninety days by notice in writing to CONTRACTOR and ENGINEER which will fix the date on which Work will be resumed. CONTRACTOR shall resume the Work on the date so fixed. CONTRACTOR shall be allowed an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension if CONTRACTOR makes an approved claim therefor as provided in Articles 11 and 12.

OWNER May Terminate:

15.2. Upon the occurrence of any one or more of the following events:

15.2.1. if CONTRACTOR persistently fails to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the progress schedule established under paragraph 2.9 as adjusted from time to time pursuant to paragraph 6.6);

15.2.2. if CONTRACTOR disregards Laws or Regulations of any public body having jurisdiction;

15.2.2. if CONTRACTOR disregards the authority of ENGINEER; or

15.2.4. if CONTRACTOR otherwise violates in any substantial way any provisions of the Contract Documents;

OWNER may, after giving CONTRACTOR (and the surety, if any,) seven days' written notice and to the extent permitted by Laws and Regulations, terminate the services of CONTRACTOR, exclude CONTRACTOR from the site and take possession of the Work and of all CONTRACTOR's tools, appliances, construction equipment and machinery at the site and use the same to the full extent they could be used by CONTRACTOR (without liability to CONTRACTOR for trespass or conversion), incorporate in the Work all materials and equipment stored at the site or for which OWNER has paid CONTRACTOR but which are stored elsewhere, and finish the Work as OWNER may deem expedient. In such case CONTRACTOR shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Price exceeds all claims, costs, losses and damages sustained by OWNER arising out of or resulting from completing the Work such excess will be paid to CONTRACTOR. If such claims, costs, losses and damages exceed such unpaid balance, CONTRACTOR shall pay the difference to OWNER. Such claims, costs, losses and damages incurred by OWNER will be reviewed by ENGINEER as to their reasonableness and when so approved by ENGINEER incorporated in a Change Order, provided that when exercising any rights or remedies under this paragraph OWNER shall not be required to obtain the lowest price for the Work performed.

15.3. Where CONTRACTOR's services have been so terminated by OWNER, the termination will not affect any rights or remedies of OWNER against CONTRACTOR then existing or which may thereafter accrue. Any retention or payment of moneys due CONTRACTOR by OWNER will not release CONTRACTOR from liability.

15.4. Upon seven days' written notice to CONTRACTOR and ENGINEER, OWNER may, without cause and without prejudice to any other right or remedy of OWNER, elect to terminate the Agreement. In such case, CONTRACTOR shall be paid (without duplication of any items):

15.4.1. for completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;

15.4.2. for expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;

15.4.3. for all claims, costs, losses and damages incurred in settlement of terminated contracts with Subcontractors, Suppliers and others; and

15.4.4. for reasonable expenses directly attributable to termination.

CONTRACTOR shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

CONTRACTOR May Stop Work or Terminate:

15.5. If, through no act or fault of CONTRACTOR, the Work is suspended for a period of more than ninety days by OWNER or under an order of court or other public authority, or ENGINEER fails to act on any Application for Payment within thirty days after it is submitted or OWNER fails for thirty days to pay CONTRACTOR any sum finally determined to be due, then CONTRACTOR may, upon seven days' written notice to OWNER and ENGINEER, and provided OWNER or ENGINEER do not remedy such suspension or failure within that time, terminate the Agreement and recover from OWNER payment on the same terms as provided in paragraph 15.4. In lieu of terminating the Agreement and without prejudice to any other right or remedy, if ENGINEER has failed to act on an Application for Payment within thirty days after it is submitted, or OWNER has failed for thirty days to pay CONTRACTOR any sum finally determined to be due, CONTRACTOR may upon seven day's written notice to OWNER and ENGINEER stop the Work until payment of all such amounts due CONTRACTOR, including interest thereon. The provisions of this paragraph 15.5 are not intended to preclude CONTRACTOR from making claim under Articles 11 and 12 for an increase in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to CONTRACTOR's stopping Work as permitted by this paragraph.

ARTICLE 16—DISPUTE RESOLUTION

If and to the extent that OWNER and CONTRACTOR have agreed on the method and procedure for resolving disputes between them that may arise under this Agreement, such dispute resolution method and procedure, if any, shall be as set forth in Exhibit GC-A, "Dispute Resolution Agreement," to be attached hereto and made a part hereof. If no such agreement on the method and procedure for resolving such disputes has been reached, and subject to the provisions of paragraphs 9.10, 9.11, and 9.12, OWNER and CONTRACTOR may exercise

Date _____ 19____

TO _____

-PROJECT-

ADDRESS _____

PROJECT _____

OWNER'S CONTRACT NO. _____

CONTRACT FOR _____

SECTION 4.0**FORMS**

NOTICE OF AWARD

NOTICE TO PROCEED

CHANGE ORDER

WORK DIRECTIVE CHANGE

APPLICATION FOR PAYMENT

CERTIFICATE OF SUBSTANTIAL COMPLETION

1. You must deliver to the OWNER _____ fully executed counterpart of the Agreement including all the Contract Documents. This includes the triplicate sets of Drawings. Each of the Contract Documents must bear your signature on the reverse page (pages _____).

2. You must deliver with the executed Agreement the Contract Security (bond) as specified in the Instructions to Bidders paragraph 4b, General Conditions paragraph 3.11 and Supplementary Conditions paragraph SC-5.11.

NOTICE OF AWARD

Dated _____, 19____

TO: _____
(BIDDER)

ADDRESS: _____

PROJECT _____

OWNER's CONTRACT NO. _____

CONTRACT FOR _____

(Insert name of Contract as it appears in the Bidding Documents)

You are notified that your Bid dated _____, 19____ for the above Contract has been considered. You are the apparent Successful Bidder and have been awarded a contract for _____

(Indicate total Work, alternates or sections of Work awarded)

The Contract Price of your contract is _____
_____ Dollars (\$ _____).

[Insert appropriate data in re Unit Prices. Change language for Cost-Plus contracts.]

_____ copies of each of the proposed Contract Documents (except Drawings) accompany this Notice of Award.
_____ sets of the Drawings will be delivered separately or otherwise made available to you immediately.

You must comply with the following conditions precedent within fifteen days of the date of this Notice of Award, that is by

_____, 199____.

1. You must deliver to the OWNER _____ fully executed counterparts of the Agreement including all the Contract Documents. This includes the triplicate sets of Drawings. Each of the Contract Documents must bear your signature on (the cover) (every) page (pages _____).
2. You must deliver with the executed Agreement the Contract Security (Bonds) as specified in the Instructions to Bidders (paragraph 18), General Conditions (paragraph 5.1) and Supplementary Conditions (paragraph SC-5.1).

Within ten days after you comply with the above conditions, OWNER will return to you one fully signed counterpart of the Agreement with the Contract Documents attached.

By: _____
(AUTHORIZED SIGNATURE)

(TITLE)

ACCEPTANCE OF AWARD

By: _____
(AUTHORIZED SIGNATURE)

(TITLE)

(DATE)

COPY to ENGINEER
(Use Certified Mail,
Return Receipt Requested)

NOTICE TO PROCEED

Dated _____, 19 _____

TO: _____
(CONTRACTOR)

ADDRESS: _____

PROJECT _____

OWNER's CONTRACT NO. _____

CONTRACT FOR _____

(Insert name of Contract as it appears in the Bidding Documents)

You are notified that the Contract Times under the above contract will commence to run on _____, 19 _____. By that date, you are to start performing your obligations under the Contract Documents. In accordance with Article 3 of the Agreement the dates of Substantial Completion and completion and readiness for final payment are _____, 19 _____ and _____, 19 _____.

Before you may start any Work at the site, paragraph 2.7 of the General Conditions provides that you and Owner must each deliver to the other (with copies to ENGINEER and other identified additional insureds) certificates of insurance which each is required to purchase and maintain in accordance with the Contract Documents.

Also before you may start any Work at the site, you must
(add other requirements)

(OWNER)

By: _____
(AUTHORIZED SIGNATURE)

(TITLE)

ACCEPTANCE OF AWARD

By: _____
(CONTRACTOR)

(AUTHORIZED SIGNATURE)

(TITLE)

(DATE)

Copy to ENGINEER
(Use Certified Mail.
Return Receipt Requested)

EJCDC No. 1910-23 (1990 Edition)

Prepared by the Engineers Joint Contract Documents Committee and endorsed by The Associated General Contractors of America.

CHANGE ORDER

(Instructions on reverse side)

No. _____

PROJECT

DATE OF ISSUANCE EFFECTIVE DATE

OWNER

OWNER's Contract No.

CONTRACTOR ENGINEER

You are directed to make the following changes in the Contract Documents.

Description:

Reason for Change Order:

Attachments: (List documents supporting change)

CHANGE IN CONTRACT PRICE:	CHANGE IN CONTRACT TIMES:
Original Contract Price \$ _____	Original Contract Times Substantial Completion: _____ Ready for final payment: _____ days or dates
Net changes from previous Change Orders No. ____ to No. ____ \$ _____	Net change from previous Change Orders No. ____ to No. ____ _____ days
Contract Price prior to this Change Order \$ _____	Contract Times prior to this Change Order Substantial Completion: _____ Ready for final payment: _____ days or dates
Net Increase (decrease) of this Change Order \$ _____	Net Increase (decrease) of this Change Order _____ days
Contract Price with all approved Change Orders \$ _____	Contract Times with all approved Change Orders Substantial Completion: _____ Ready for final payment: _____ days or dates

RECOMMENDED:

APPROVED:

ACCEPTED:

By: _____
Engineer (Authorized Signature)By: _____
Owner (Authorized Signature)By: _____
Contractor (Authorized Signature)

Date: _____

Date: _____

Date: _____

EJCDC No. 1910-8-B (1990 Edition)

Prepared by the Engineers Joint Contract Documents Committee and endorsed by The Associated General Contractors of America.

CHANGE ORDER

WORK CHANGE DIRECTIVE

INSTRUCTIONS

A. GENERAL INFORMATION

This document was developed to provide a uniform format for handling contract changes that affect Contract Price or Contract Times. Changes that have been initiated by a Work Change Directive must be incorporated into a subsequent Change Order if they affect Contract Price or Times.

Changes that affect Contract Price or Contract Times should be promptly covered by a Change Order. The practice of accumulating change order items to reduce the administrative burden may lead to unnecessary disputes.

If Milestones have been listed any effect of a Change Order thereon should be addressed.

For supplemental instructions and minor changes not involving a change in the Contract Price or Contract Times, a Field Order may be used.

B. COMPLETING THE CHANGE ORDER FORM

Engineer initiates the form, including a description of the changes involved and attachments based upon documents and proposals submitted by Contractor, or requests from Owner, or both.

Once Engineer has completed and signed the form, all copies should be sent to Contractor for approval. After approval by Contractor, all copies should be sent to Owner for approval. Engineer should make distribution of executed copies after approval by Owner.

If a change only applies to Contract Price or to Contract Times, cross out the part of the tabulation that does not apply.

Method of determining change in
Contract Price:

☐ Unit Price

☐ Lump Sum

☐ Other _____

Estimated increase (decrease) in Contract Price:

If the change involves an increase, the estimated amount is to be included without further authorization.

Method of determining change in
Contract Times:

☐ Contractor's records

☐ Engineer's records

☐ Other _____

Estimated increase (decrease) in Contract Times:
Substantial Completion _____

Ready for final payment _____

If the change involves an increase, the estimated amount is not to be included without further authorization.

RECOMMENDED:

By: _____
ENGINEER

By: _____

AUTHORIZED:

By: _____
OWNER

By: _____

WORK CHANGE DIRECTIVE

(Instructions on reverse side)

No. _____

PROJECT _____

DATE OF ISSUANCE _____ EFFECTIVE DATE _____

OWNER _____

OWNER's Contract No. _____

CONTRACTOR _____ ENGINEER _____

You are directed to proceed promptly with the following change(s):

Description:

Purpose of Work Change Directive:

Attachments: (List documents supporting change)

If a claim is made that the above change(s) have affected Contract Price or Contract Times any claim for a Change Order based thereon will involve one or more of the following methods of determining the effect of the change(s).

Method of determining change in
Contract Price:

☐ Unit Prices

☐ Lump Sum

☐ Other _____

Method of determining change in
Contract Times:

☐ Contractor's records

☐ Engineer's records

☐ Other _____

Estimated increase (decrease) in Contract Price:

\$ _____

If the change involves an increase, the estimated amount is not to be exceeded without further authorization.

Estimated increase (decrease) in Contract Times:

Substantial Completion: _____ days;

Ready for final payment: _____ days.

If the change involves an increase, the estimated times are not to be exceeded without further authorization.

RECOMMENDED:

ENGINEER

By: _____
(Authorized Signature)

AUTHORIZED:

OWNER

By: _____
(Authorized Signature)

WORK CHANGE DIRECTIVE

INSTRUCTIONS

A. GENERAL INFORMATION

This document was developed for use in situations involving changes in the Work which, if not processed expeditiously, might delay the Project. These changes are often initiated in the field and may affect the Contract Price or the Contract Times. This is not a Change Order, but only a directive to proceed with Work that may be included in a subsequent Change Order.

For supplemental instructions and minor changes not involving a possible change in the Contract Price or the Contract Times a Field Order may be used.

B. COMPLETING THE WORK CHANGE DIRECTIVE FORM

Engineer initiates the form, including a description of the items involved and attachments.

Based on conversations between Engineer and Contractor, Engineer completes the following:

METHOD OF DETERMINING CHANGE, IF ANY, IN CONTRACT PRICE: Mark the method to be used in determining the final cost of Work involved and the estimated net effect on the Contract Price. If the change involves an increase in the Contract Price and the estimated amount is approached before the additional or changed Work is completed, another Work Change Directive must be issued to change the estimated price or Contractor may stop the changed Work when the estimated price is reached. If the Work Change Directive is not likely to change the Contract Price, the space for estimated increase (decrease) should be marked "Not Applicable."

METHOD OF DETERMINING CHANGE, IF ANY, IN CONTRACT TIMES: Mark the method to be used in determining the change in Contract Times and the estimated increase or decrease in Contract Times. If the change involves an increase in the Contract Times and the estimated times are approached before the additional or changed Work is completed, another Work Change Directive must be issued to change the times or Contractor may stop the changed Work when the estimated times are reached. If the Work Change Directive is not likely to change the Contract Times, the space for estimated increase (decrease) should be marked "Not Applicable."

Once Engineer has completed and signed the form, all copies should be sent to Owner for authorization because Engineer alone does not have authority to authorize changes in Price or Times. Once authorized by Owner, a copy should be sent by Engineer to Contractor. Price and Times may only be changed by Change Order signed by Owner and Contractor with Engineer's recommendation.

Once the Work covered by this directive is completed or final cost and times are determined, Contractor should submit documentation for inclusion in a Change Order.

THIS IS A DIRECTIVE TO PROCEED WITH A CHANGE THAT MAY AFFECT THE CONTRACT PRICE OR THE CONTRACT TIMES. A CHANGE ORDER, IF ANY, SHOULD BE CONSIDERED PROMPTLY.

To _____

Contract for _____

OWNER's Contract No. _____, ENGINEER's Project No. _____

For Work accomplished through the date of _____.

ITEM	CONTRACTOR's Schedule of Values			Work Completed	
	Unit Price	Quantity	Amount	Quantity	Amount
	\$		\$		\$
Total (Orig. Contract) C.O. No. 1 C.O. No. 2			\$		\$

Accompanying Documentation:	GROSS AMOUNT DUE	\$
_____	LESS ____ % RETAINAGE	\$
_____	AMOUNT DUE TO DATE	\$
_____	LESS PREVIOUS PAYMENTS	\$
_____	AMOUNT DUE THIS APPLICATION	\$

CONTRACTOR'S Certification:

The undersigned CONTRACTOR certifies that: (1) all previous progress payments received from OWNER on account of Work done under the Contract referred to above have been applied to discharge in full all obligations of CONTRACTOR incurred in connection with Work covered by prior Applications for Payment numbered 1 through _____ inclusive; (2) title to all Work, materials and equipment incorporated in said Work or otherwise listed in or covered by this Application for Payment will pass to OWNER at time of payment free and clear of all liens, claims, security interest and encumbrances (except such as are covered by Bond acceptable to OWNER indemnifying OWNER against any such lien, claim, security interest or encumbrance); and (3) all Work covered by this Application for Payment is in accordance with the Contract Documents and not defective as that term is defined in the Contract Documents.

Dated _____, 19_____

CONTRACTOR

By _____

(Authorized Signature)

Payment of the above AMOUNT DUE THIS APPLICATION is recommended.

Dated _____, 19____

ENGINEER

Bv _____

(Authorized Signature)

APPLICATION FOR PAYMENT

INSTRUCTIONS

A. GENERAL INFORMATION

This standard form is intended as a guide only. Many projects require a much more extensive form with space for numerous items, descriptions of Change Orders, identification of variable quantity adjustments, summary of materials and equipment stored at the site and other information. It is expected that a separate form will be developed by Engineer or Contractor at the time Contractor's Schedule of Values is finalized. Note also that the format for retainage must be changed if the Agreement permits (or the Law provides), and Contractor elects, the deposit of securities in lieu of retainage. Refer to Article 14 of the General Conditions for provisions concerning payments to Contractor.

B. COMPLETING THE FORM

The Schedule of Values, submitted and approved as provided in paragraphs 2.6.3 and 2.9 of the General Conditions, should be copied in the space indicated on the Application For Payment form. Note that the cost of materials and equipment is often listed separately from the cost of their installation. All Change Orders affecting the Contract Price should be identified and include such supplemental Schedules of Values as required for progress payments.

The form is suitable for use in the Final Application for Payment as well as for Progress Payments; however, the required accompanying documentation is usually more extensive for final payment. All accompanying documentation should be identified in the space provided on the form.

C. ENGINEER'S REVIEW

Engineer *must* review all Applications for Payment with care to avoid recommending any payments not yet earned by Contractor. All accompanying documentation of legal nature, such as lien waivers, should be reviewed by Owner's attorney, and Engineer should so advise Owner.

CERTIFICATE OF SUBSTANTIAL COMPLETION

PROJECT

DATE OF ISSUANCE

OWNER

OWNER's Contract No.

CONTRACTOR ENGINEER

This Certificate of Substantial Completion applies to all Work under the Contract Documents or to the following specified parts thereof:

TO

OWNER

And To

CONTRACTOR

The Work to which this Certificate applies has been inspected by authorized representatives of OWNER, CONTRACTOR and ENGINEER, and that Work is hereby declared to be substantially complete in accordance with the Contract Documents on

.....
DATE OF SUBSTANTIAL COMPLETION

A tentative list of items to be completed or corrected is attached hereto. This list may not be all-inclusive, and the failure to include an item in it does not alter the responsibility of CONTRACTOR to complete all the Work in accordance with the Contract Documents. The items in the tentative list shall be completed or corrected by CONTRACTOR within _____ days of the above date of Substantial Completion.

EJCDC No. 1910-8-D (1990 Edition)

Prepared by the Engineers Joint Contract Documents Committee and endorsed by The Associated General Contractors of America.

From the date of Substantial Completion the responsibilities between OWNER and CONTRACTOR for security, operation, safety, maintenance, heat, utilities, insurance and warranties and guarantees shall be as follows:

RESPONSIBILITIES:

OWNER: _____

CONTRACTOR: _____

The following documents are attached to and made a part of this Certificate:

[For items to be attached see definition of Substantial Completion as supplemented and other specifically noted conditions precedent to achieving Substantial Completion as required by Contract Documents.]

This certificate does not constitute an acceptance of Work not in accordance with the Contract Documents nor is it a release of CONTRACTOR's obligation to complete the Work in accordance with the Contract Documents.

Executed by ENGINEER on , 19

.....
ENGINEER

By:
(Authorized Signature)

CONTRACTOR accepts this Certificate of Substantial Completion on , 19

.....
CONTRACTOR

By:

OWNER accepts this Certificate of Substantial Completion on , 19

.....
OWNER

By:
(Authorized Signature)

SECTION 5.0 - SPECIAL PROVISIONS
MOBILIZATION AND DEMOBILIZATION - AND PART 1

PART 1 - GENERAL

1.1 DESCRIPTION

This specification covers the mobilization and demobilization, preparation and installation of the following: mobilization, permits, temporary facilities, health and safety plan and demobilization. The city location is shown on drawing - 1.

1.2 SUBMITTALS

Within 5 working days after receipt of Notice to Proceed, the CONTRACTOR shall submit to the OWNER in the form required by the CITY of YORK, a schedule of mobilization and demobilization costs for the project. The schedule shall include the following: mobilization costs, demobilization costs, and the total mobilization and demobilization costs. The CONTRACTOR shall also submit to the OWNER a list of all equipment, materials, and personnel to be mobilized for the project.

SECTION 5.0
SPECIAL PROVISIONS

S.P. #1 - MOBILIZATION AND DEMOBILIZATION

S.P. #2 - INSTALL GROUNDWATER WELL PUMPS COMPLETE WITH VALVE VAULTS, CONTROLS, AND ELECTRICAL CONNECTIONS.

S.P. #3 - INSTALL PIPELINE AND TRENCH COMPLETE WITH TRENCH EXCAVATION, INSTALLATION OF PIPE BEDDING AND POLYETHYLENE PIPE, TRENCH BACKFILL AND COMPACTION WITH SOD REPLACEMENT WHERE NECESSARY, INSTALLATION OF MISCELLANEOUS VALVE VAULTS AND CONTROLS, AND STOCKPILING OF EXCESS MATERIAL TO DESIGNATED AREA

S.P. #4 - INSTALL FLOATING FOUNTAINS IN PONDS

S.P. #5 - SYSTEM START-UP AND TESTING

All preparatory work and installation of temporary facilities shall be done in accordance with applicable codes and regulations.

EXISTING UTILITIES AND PRIVATE PROPERTIES

1. Mobilization, the CONTRACTOR shall protect in writing all public and private utility companies, including all lines that may be affected or may be interrupted or affected. During installation of facilities, equipment, and other construction items, the contractor shall include the following information:

* The nature of work and the CONTRACTOR will be performed.

SECTION 5.0 - SPECIAL PROVISIONS

MOBILIZATION AND DEMOBILIZATION - BID ITEM # 1

PART 1 - GENERAL

1.1 DESCRIPTION

This specification covers the requirements for mobilization, preparatory work including utilities locates, permits, temporary facilities, health and safety plan and demobilization. The site location is shown on Drawing #1.

1.2 SUBMITTALS

Within 5 working days after receipt of Notice to Proceed, CONTRACTOR shall submit, to the OWNER or his Representative, a written plan identifying the CONTRACTOR's schedule and access requirements for the site. Concentration of tetrachloroethene (PCE) exceed the maximum contaminant level of 5 ppb in the groundwater wells (a maximum of 24 ppb in well HL-99-3); therefore, The CONTRACTOR shall also submit to the OWNER or his Representative a written Health and Safety plan for all site activities.

PART 2 - PRODUCTS

CONTRACTOR shall utilize appropriate and sufficient products and equipment in the conduct of all preparatory work and the establishment of all temporary facilities, consistent with the nature and requirements of the project and health and safety of workers and the public.

PART 3 - EXECUTION

3.1 MOBILIZATION

Within five (5) days following receipt of the Notice to Proceed, CONTRACTOR shall begin mobilizing to the Site all labor, materials, equipment, and construction facilities necessary for the proper performance of the Work.

3.2 INSTALLATION OF FACILITIES

All preparatory work and installation of temporary facilities shall be done in accordance with applicable codes and regulations.

A. EXISTING UTILITIES AND PRIVATE PROPERTY

1. Notification. The CONTRACTOR shall contact, in writing, all public and private utility companies, including rail lines, that may have utilities that may be encountered, or affected, during installation of facilities, excavation, and other construction phases. The notification shall include the following information:

* The nature of work that the CONTRACTOR will be performing.

- * The time, date and location that the CONTRACTOR will be performing work that may conflict with the utility.
- * The nature of work that the utility will be required to perform such as moving a power pole, supporting a pole or underground cable, etc.
- * Requests for field location and identification of utilities.

A copy of the letter of notification shall be provided to the OWNER's Representative. During the course of construction, the CONTRACTOR shall keep the utility companies notified of any change in schedule or nature of work that differs from the original notification.

2. Identification. All utilities that may conflict with the work shall be the CONTRACTOR's responsibility to locate before any excavation is performed. Field markings provided by the utilities shall be preserved by the CONTRACTOR until actual excavation commences. All utility locations on the Plans should be considered approximate and should be verified in the field by the CONTRACTOR. The CONTRACTOR shall also be responsible for locating all utilities that are not located on the Plans.
3. Removal or Relocation of Utilities. This section applies to electric power, gas, telephone and television utilities. Whenever there is a direct conflict between the work being performed and the utility, the CONTRACTOR shall be responsible to remove, relocate or temporarily support the utility during the course of construction. Any charges by the utility for removing, relocation or temporarily supporting the utility shall be paid for by the CONTRACTOR.

Before trenching within ten (10) feet of the underground fibre optic cable located south of and parallel to the overhead electrical lines, as shown on Drawing #2, the CONTRACTOR shall contact Bruce Chaffin at Sprint, (406) 443-6461, and notify him of the proposed work. His consent must be obtained prior to commencement of the work. When crossing the line, Bruce Chaffin must be on site to oversee the work.

4. Public Utilities. Water, sewer, storm drainage, street lighting and other utilities owned and operated by the public entities shall, unless otherwise specifically requested by the utility owner, be removed, relocated, supported or adjusted as required by the CONTRACTOR at the CONTRACTOR's expense. All such work shall be in accordance with these Specifications, or the OWNER's Standard Specifications or written instructions when the work involved is not covered by these Specifications.
5. Other Utilities. Utilities owned and operated by private individuals, railroads, school districts, associations, or other entities not covered in sections "3" or "4" shall, unless otherwise specifically requested by the utility owner, be removed, relocated, supported or adjusted as required by the CONTRACTOR

at the CONTRACTOR's expense. All work shall be in accordance with the utility owner's directions, or by methods recognized as being the standard of the industry when directions are not given by the owner of the utility.

6. **Damage to Utilities and Private Property.** The CONTRACTOR shall protect all utilities and private property and shall be solely responsible for any damage resulting from his construction activities. The CONTRACTOR shall hold the OWNER and OWNER's Representative harmless from all actions resulting from his failure to properly protect utilities and private property. All damage to utilities shall be repaired at the CONTRACTOR's expense to the full satisfaction of the owner of the damaged utility or property. The CONTRACTOR shall provide the OWNER with a letter from the owner of the damaged utility or property stating that it has been repaired to the utility owner's full satisfaction.
7. **Water Mains and Services.** The Golf Course contains several water mains, distribution lines and sprinklers systems, as shown on the Drawings. All water mains and services exposed during construction shall be adequately supported and protected from freezing at all times. Sections of water mains shall not be valved off without first giving the OWNER sufficient notification and receiving authorization from the OWNER's Representative.

Whenever a water main or service is damaged as a result of the CONTRACTOR's operations, the CONTRACTOR shall take immediate steps to repair the damage and disinfect all water mains and services contaminated as a result of the damage.

Existing water services from the mains to the golf course irrigation system which interferes with trenching operations may only be cut with the express permission of Larry Kurkahowa, the Bill Roberts Golf Course Grounds Keeper, (406) 447-1572. Any cut lines must be replaced at the CONTRACTOR's expense. It is preferred that the Contractor lay the line either above or below existing water services without interruption to existing services.

8. **Maintenance of Flows.** Adequate provisions shall be made for maintaining the flow of sewers, drains, and water courses encountered during construction. Culverts, ditches, fences, crosswalks, and structures which are disturbed by this construction shall be satisfactorily restored to their original condition upon completion of the work.
9. **Structures.** The CONTRACTOR shall exercise every precaution to prevent damage to existing buildings or structures in the vicinity of his work. In the event of such damages, he shall repair them to the satisfaction of the owner of the damaged structure at no cost to the OWNER. The contractor shall provide

trench boxes or other means of shoring in the trench when trench is within 15' of building or structure.

10. Overhead Utilities. The CONTRACTOR shall use extreme caution to avoid a conflict, contact, or damage to overhead utilities, such as power lines, street lights, telephone lines, television lines, poles, or other appurtenances during the course of construction of this project.
11. Survey Markers and Monuments. The CONTRACTOR shall use every care and precaution to protect and not disturb any survey marker or monument, such as those that might be located at lot or block corners, property pins, intersection of street monuments or addition line demarcation. Such protection shall include markings with flagged high lath and close supervision. No monuments shall be disturbed without prior approval of the OWNER's Representative. Any survey marker or monument that is disturbed by the CONTRACTOR during the construction of the project shall be replaced at no cost to the OWNER by a licensed land surveyor.
12. The Contractor shall schedule construction operations in a manner which will ensure that: 1) the safety and convenience of motorists and pedestrians, and the safety of construction workers, are adequately met at all times; 2) at least one of the roadways adjacent to the trench remains open at all times; and 3) the project is completed in a manner most beneficial to the project as a whole. All signing and striping shall conform to the standards set forth in the Manual of Uniform Traffic Control Devices (MUTCD).

B. General. The Contractor shall implement dust suppression measures, as necessary, or as requested by the ENGINEER or OWNER to limit dust generation during all phases of mobilization, site activities, and demobilization activities.

All activities conducted within the boundaries of the Golf Course shall be coordinated with Larry Kurkahowa, the Bill Roberts Golf Course Grounds Keeper, (406) 447-1572.

All equipment will be in a state of good repair to limit incidental contamination and noise pollution during site preparation and remediation activities. Only experienced equipment operators will operate equipment on the project. Equipment will be operated in a safe manner at all times.

Work areas will be flagged and/or fenced to limit access during off hours. Work activities must be conducted at all times in a manner which will minimize or eliminate disturbance to on-going business activities at the facility. All refuse generated by the contractor must be properly disposed offsite.

CONTRACTOR shall bear the responsibility of scheduling equipment and material delivery. Scheduling should be conducted in a manner which will reduce the time required on-site and disturbance to on-going operations.

CONTRACTOR is responsible for securing all valuable items, materials, and equipment during non-working periods. All materials and chemicals will be handled as prescribed by the manufacturer.

Demobilization will be conducted after the site has been inspected by the ENGINEER and/or OWNER and judged to be in a satisfactory condition.

Costs for construction of any temporary facilities will be included as a lump payment with mobilization and demobilization. CONTRACTOR will be responsible for all costs associated with construction of temporary facilities including electricity, water, phone, sanitary facilities, etc.

PART 4 - MEASUREMENT AND PAYMENT - Bid Item # 1

- A. There will be no measurement for payment of mobilization and demobilization costs.
- B. Payment will be made at the lump sum price shown in the Bid Schedule and shall be full compensation for all mobilization, site access, preparatory work, temporary facilities, site cleanup and demobilization. Sixty percent of the amount bid against this item will be paid with the first progress claim, and the remaining forty percent will be paid following site cleanup and demobilization. Full payment of the amount bid against this item will be reimbursed if the project is completed to the satisfaction of the OWNER within the first invoice period.
- C. No separate payment will be paid for dust suppression.

SECTION 5.0 - SPECIAL PROVISIONS
INSTALL GROUNDWATER WELL PUMPS COMPLETE WITH VALVE VAULTS,
CONTROLS, AND ELECTRICAL CONNECTIONS – BID ITEM #2

PART 1 - GENERAL

1.1 DESCRIPTION

This work consists of installing submersible groundwater pumps and associated fittings into three existing wells, installing a valve vault with controls for each pump, and completing electrical connections required to produce an operable system.

PART 2 - PRODUCTS

Contractor shall furnish all equipment needed for installation of groundwater well pumps, valve vaults, controls and electrical connections as described in this section and as shown on the Drawings.

Contractor shall furnish and install a 4" submersible pump in well HL-99-1. This shall include a Grundfos Model 40S50-15PE pump end with a Franklin G10975 5HP, 460V, 3 phase, 60 cycle motor.

Contractor shall furnish and install a 4" submersible pump in well HL-99-2. This shall include a Grundfos Model 40S50-15PE pump end with a Franklin G10975 5HP, 460V, 3 phase, 60 cycle motor.

Contractor shall furnish and install a 4" submersible pump in well HL-99-3. This shall include a Grundfos Model 40S50-12PE pump end with a Franklin G10975 5HP, 460V, 3 phase, 60 cycle motor.

Contractor shall furnish and install 12/3 flat sub-cable with ground to complete pump electrical connections.

Contractor shall furnish and install 1-1/4" x 2" brass reducers in each well as shown in Drawings.

Contractor shall furnish and install 160# SIDR-9 black polyethylene pipe in each well as shown in the Drawings.

Contractor shall furnish and install brass pitless adapters (5" for well HL-99-1, 6" for well HL-99-2 and 8" for well HL-99-3) as shown in the Drawings. These adapters shall be rated for a minimum 2,000 pound weight capacity.

Contractor shall furnish and install 1-1/4" brass insert x MIP adapters as shown in the Drawings. These adapters shall be used with hose clamps and shall be used to connect fittings to the black poly pipe.

Contractor shall furnish and install a 3/8" nylon safety rope for each pump as shown in the Drawings.

Contractor shall furnish all equipment needed for excavation and handling of material for installation of valve vaults and connections to pipe header.

For each well, Contractor shall furnish and install a 17"w x 30"l x 18"h polymer splice box with mouse holes, Armorcast Model A6001640APC or approved equivalent. The lids, at a minimum, shall be 20,000 pound "traffic" rated. Vault lid shall be fitted with recessed lock downs. Bolts shall be hex head or four (4) special tools shall be supplied for other bolt heads.

Contractor shall furnish and install Schedule 80 PVC pipe and fittings between well and valve vault, inside valve vault, and between valve vault and pipe header. Fittings shall include, but are not limited to, 1-1/4" unions, quarter-turn ball valves, 45-degree elbows, and y-fittings.

Contractor shall furnish and install a horizontal flow meter in each valve vault as shown on the Drawings. Meters shall have a 5-40 gpm capacity. Meters shall be Blue-White Model F-30100, or approved equivalent.

Contractor shall furnish and install a 1/2" bronze hose bib (Grainger Stock No. 5E414) as shown in the Drawings. Hose bib shall be oriented to face away from electrical boxes.

Contractor shall furnish and install a 1-1/4" bronze check valve in each valve vault as shown on the Drawings. These valves shall conform to ASTM B-584.

All other fittings and piping required to furnish a complete operable system shall be furnished and installed by the Contractor and shall be constructed of a material comparable to specified fittings and piping.

For each pump, Contractor shall furnish and install a heavy-duty, single-throw, non-fusible safety switch. This switch shall be compatible with 480V, 3 phase power and be rated for 20 amp, 5HP maximum loading. The enclosure for this switch shall be NEMA 1. Grainger Stock No. HU361 or approved equivalent.

For each pump, Contractor shall furnish and install a magnetic starter. The starter shall be sized for 460V, 5HP, NEMA size 0, an overload range of 2.5-10 amps with a 460V coil. The enclosure for this starter shall be NEMA 1. The starter shall be Pumps, Inc. Part No. 14CSD32BC, or approved equivalent.

PART 3 – EXECUTION

- A. It is the responsibility of the Contractor to locate any and all utilities prior to any excavation occurring.
- B. The Contractor shall furnish and install submersible pumps in each of three wells as shown on the Drawings. These pumps shall be secured with a safety rope and heavy-duty eye screw as shown on the Drawings. Electrical connections shall be made per the manufacturer's recommendations and shall include a wire nut connection and eye screw within inside the well casing and within easy reach of the opening. 1-1/4" black poly pipe will be used to connect each pump to a brass pitless adapter installed in the well casing approximately 12" below the ground surface. At well HL-99-1, a portion of the 8" well casing will need to be removed prior to installing a pitless adapter in the interior 5" well casing. A 3/8" hole will be drilled in the black poly pipe just above each pump to allow for drainage back into the well.
- C. A polymer splice box shall be installed at grade at a distance of one (1) foot from the well casing. Boxes shall be bedded on all sides with 4" of compacted Type 1 Bedding. Backfill shall be in accordance with Montana Public Works Standard Specifications Section 02221 Trench Excavation and Backfill for Pipelines & Appurtenant Structures. Minimum Compaction around boxes shall be 90% at 0% to 3% above optimum moisture as determined by AASHTO T99 or by ASTM D698. Piping between the bronze check valve and pitless adapter shall be installed at a 1/4" slope to allow for drainage back into the well. Unions, ball valves, check valves, flow meters, and hose bibbs shall be installed as shown on the Drawings. All hose bibbs shall be oriented to direct water away from electrical panels. The header pipe shall be located a maximum distance of six feet from the well casing.
- D. The OWNER shall provide electrical power from power poles to each box. The Contractor shall furnish and install safety switch and magnetic motor starter as shown on the Drawings. The starter shall be connected to the pump as shown on the Drawings.

PART 4 - MEASUREMENT AND PAYMENT – BID ITEM # 2

There is no measurement for payment of this bid item. Payment will be made at the lump sum price shown in the Bid Schedule and shall be full compensation for all equipment, tools and labor, including the performance of all work to provide incidentals necessary to complete this item.

Payment will be made under the following:

Install Groundwater Well Pumps Complete with Valve Vaults, Controls, and Electrical Connections Lump Sum.

SECTION 5.0 - SPECIAL PROVISIONS
INSTALL PIPELINE AND TRENCH COMPLETE WITH TRENCH EXCAVATION,
INSTALLATION OF PIPE BEDDING AND POLYETHYLENE PIPE, TRENCH
BACKFILL AND COMPACTION WITH SOD REPLACEMENT WHERE
NECESSARY, INSTALLATION OF MISCELLANEOUS VALVE VAULTS AND
CONTROLS, AND STOCKPILING OF EXCESS MATERIAL TO DESIGNATED
AREA – BID ITEM #3

PART 1 - GENERAL

1.1 DESCRIPTION

This work consists of excavating approximately 2,000 feet of trench, installing of pipe bedding and black polyethylene pipe, and all backfilling, compaction, and sod replacement required. It includes all clearing, grubbing, site preparation, removal of debris from the excavation, handling and storing material for fill and backfill, all bracing, shoring and trench protection, construction dewatering, all backfill, sub-grade preparation, final grading, site dressing and cleanup. This work includes furnishing labor, materials and equipment necessary to haul and place excess excavated materials which have been removed from the trench.

PART 2 – PRODUCTS

Contractor shall furnish all equipment needed for excavation of approximately 2,000 feet of trench including clearing, grubbing, site preparation, trench preparation, bracing shoring, trench protection, dewatering, handling of fill for backfill, and handling excess material as described in this section and as shown on the Drawings.

Contractor shall furnish and install all 160# SDR-9 black polyethylene pipe, pipe fittings, and material needed for the complete installation of pipe as shown on the Drawings.

Contractor shall furnish and install a detectable buried warning tape that is to have a minimum 6 inch width and 5 mil thickness and a solid aluminum core running the full length and width of the tape enclosed in a color coded inert plastic jacket, impervious to alkalis, chemical reagents and solvents in the soil. The tape is to meet APWA/ULCC color Code requirements and is to have a maximum 36 inch imprint.

Contractor shall furnish all equipment needed to haul and stockpile all excess materials to the designated areas.

Contractor shall supply and install a 12"x12"x12" valve vault at the trench head with a locking traffic lid as shown in the Drawings. The lid shall, at a minimum, be "traffic" rated and be designed for 20,000 pound loading. Vault lid shall be fitted with recessed lock downs. Locking BOLTS shall be hex head, or (4) four special tools shall be supplied with the box. Vault shall be Armorcast Polymer Splice Box with mouse holes, Part No.

A6001423A, or approved equivalent. This valve vault shall contain a 1-1/2" brass insert x MIP adapter with hose clamp, 1-1/2" x 2-1/2" Schedule 80 PVC reducer, 2-1/2" Schedule 80 pipe, 90 degree elbow, and capped male NPT outlet. All other fittings and piping required to furnish a complete operable system shall be furnished and installed by the Contractor and shall be constructed of a material comparable to specified fittings and piping.

Contractor shall supply and install a 12"x18"x12" valve vault downgradient of well HL-99-3 as shown in the Drawings. The lid shall be "traffic" rated and be designed for 20,000 pound loading. Vault lid shall be fitted with recessed lock downs. Locking BOLTS shall be hex head, or (4) four special tools shall be supplied with the box. Vault shall be Armorcast Polymer Splice Box with mouse holes, Part No. A6001425A, or approved equivalent. This valve vault shall contain two 3" brass insert x MIP adapters with hose clamps, 3"x2"x3" Schedule 80 PVC Y-fitting with 2" leg capped. All other fittings and piping required to furnish a complete operable system shall be furnished and installed by the Contractor and shall be constructed of a material comparable to specified fittings and piping.

Contractor shall supply and install a 14"x20"x6" valve vault at trench split near first pond as shown in the Drawings. Vault shall be Amatek Control Valve Box, or approved equivalent. This valve vault shall contain three (3) brass insert x MIP adapters with hose clamps (sizes vary), 3"x2"x1-1/2" Schedule 80 PVC Y-fitting, a 1-1/2" Schedule 80 PVC quarter-turn ball valve, and a 1-1/2"x2-1/2" tee with capped male NPT output on tee leg. All other pipe or fittings required to complete the work as shown shall be Schedule 80 PVC or approved by Engineer.

Contractor shall supply and install a 14"x20"x6" valve vault at existing pump house near second pond as shown in the Drawings. Vault shall be Amatek Control Valve Box, or approved equivalent. This valve vault shall contain a 2" brass insert x MIP adapter with hose clamp, a 2"x2-1/2" Schedule 80 PVC tee with capped male NPT output on tee leg, a 2"x1-1/4"x1-1/4" Schedule 80 PVC Y-fitting, two 1-1/4" Schedule 80 PVC quarter-turn ball valves, and two 1-1/4" male NPT discharge fittings.

PART 3 – EXECUTION

- A. It is the responsibility of the Contractor to locate any and all utilities prior to any excavation occurring. Before excavating within ten (10) feet of the underground fibre optic cable located south of and parallel to the overhead electrical lines, as shown on the Drawings, the Contractor shall contact Bruce Chaffin at Sprint, (406) 443-6461, and notify him of the proposed work. His consent must be obtained prior to commencement of the work. The Contractor shall make every effort to accommodate any comments or suggestions made by the Sprint representative.
- B. The Contractor shall excavate a trench as shown in the drawings and in accordance with the Montana Public Works Standard Specifications Section 02221 – Trench Excavation and Backfill for Pipelines and Appurtenant Structures. The trench width should be a minimum of one (1) foot across, but not so wide as to disturb more ground than

necessary. Type 1 trench bedding should be placed to a depth of four (4) inches below the pipe, around the pipe and to a depth of six (6) inches over the pipe. The black polyethylene pipe should be installed per the manufacturer's instructions. The Contractor shall take precautions to protect the pipe from damage during installation such that the pipe is free from all but surficial damage after backfill and compaction.

- C. Where shown on the Drawings, sod shall be cut to a depth of two (2) inches and removed in, at a maximum, five (5) foot lengths. The width of the cuts should be sufficient to complete trenching but so as to minimize the amount of ground disturbed during construction. The removed sod shall be carefully rolled and stacked and stored in a protected place until replacement. The sod shall be carefully replaced and fitted so as to match the existing contours of the golf course fairway. Any damaged sod shall be replaced at the expense of the Contractor and to the approval of the Engineer.
- D. Where shown on the Drawings, the Contractor shall be required to trench through the existing golf cart path. In these areas, the cover shall be carefully pulled back and stockpiled. The underlying native ground shall be excavated, backfilled and compacted as previously specified before replacing and compacting the stockpiled cover to match existing conditions.
- E. The contractor shall take precautions to protect all adjoining private and public property and facilities, including underground and overhead utilities, structures, and fences and shall restore to its original condition all damages at the Contractor's expense.
- F. The Contractor shall meet current OSHA Safety and Health Standards for all excavation, trenching, shoring, and related work.
- G. Excavated soils from the trenching operations may be reused as trench backfill provided the excavated backfill soil is free of hazardous material, and can be readily compacted, i.e., free from clods, lumps of frozen material or boulders. This material must also be free of cinders, ash, refuse, organic material or other deleterious materials. Place trench backfill in maximum 8 inch compacted lifts within 3 percent of optimum moisture content, and compact to at least 95 percent of maximum dry density determined by AASHTO T99 or by ASTM D698. The Owner or the Owner's Representative shall be responsible for obtaining backfill samples and having a certified soils lab produce a moisture/density curve. The Owner's Representative shall also be responsible for completing compaction testing using a nuclear densiometer and shall measure density at least once for every 200 feet of trench completed.
- H. The Contractor shall provide and install a warning tape as described in Products Section and as shown in the Drawings.
- D. Excavation shall include the removal and subsequent handling of all earth, gravel, rock, or other material encountered regardless of the type, character, composition, or condition of the material.

- E. All excavation, and shoring, and the like, under this Contract shall be performed in a manner that meets with the OSHA and Department of Labor, Safety, and Health Regulations for Construction.
- F. Excess excavated soil shall be hauled to area designated on the Drawings. Contractor shall prevent any fugitive dusts from escaping to the atmosphere during excavation, and stockpiling operations.
- G. Contractor will maintain a dust suppression program throughout all dirtwork activities including, excavation, stripping, treatment, screening, backfilling and compaction. Dust suppression will be conducted in all working areas during site remediation activities.
- H. Contractor will limit runoff and runoff of precipitation throughout all phases of remediation. Runoff and runoff control measures will include placement of berms around stockpiles to limit runoff and covering stockpiles with plastic covering, or equivalent, during non-working activities.
- I. Valve vaults shall be installed at the surrounding grade. Boxes shall be bedded on all sides with 4" of compacted Type 1 Bedding. Backfill shall be in accordance with Montana Public Works Standard Specifications Section 02221 Trench Excavation and Backfill for Pipelines & Appurtenant Structures. Minimum Compaction around boxes shall be 90% at 0% to 3% above optimum moisture as determined by AASHTO T99 or by ASTM D698.

PART 4 - MEASUREMENT AND PAYMENT - BID ITEM #3

This item will be measured and paid for at the contract unit price bid per lineal foot, constituting full compensation for all equipment, tools and labor, including the performance of all works to provide incidentals necessary to complete this item. Payment will be made under the following:

Install Header Trench Complete with Trench Excavation, Installation of Pipe Bedding and Polyethylene Pipe, Trench Backfill and Compaction with Sod Replacement Where Necessary, Installation of Miscellaneous Valve Vaults and Controls, and Stockpiling of Excess Material to Designated Area per Lineal Foot.

SECTION 5.0 - SPECIAL PROVISIONS
INSTALL FLOATING FOUNTAINS IN PONDS – BID ITEM #4

PART 1 - GENERAL

1.1 - DESCRIPTION

This work consists of complete installation of the floating fountains including site work, atomizing spray nozzles, floatation devices and anchors, hoses and hose connections.

PART 2 - PRODUCTS

Contractor shall furnish all equipment and materials needed to install the floating fountains, hoses, fittings, and appurtenances as described in this section and as shown on the Drawings.

The floatation device shall be a Otterbine Concept 2 Float, Part No. C2-400, or approved equivalent. This device shall be fitted with a 16" diameter 1/4" 304 Stainless Steel plate and a stainless steel 1-1/4" male NPT x 3/4" female NPT reducer as shown on the drawings. The nozzle shall be a 3/4" brass SpiralJet hollow cone spray nozzle, Part No. 3/4 BSJ-90 210 or approved equivalent. The hose shall be 1-1/4" Spa Flex Hose with aluminum/brass shank coupling with male NPSM threads and aluminum/brass swivel coupling with female NPSM threads or approved equivalent. Anchors shall be concrete-filled 5-gallon buckets with cast-in-place eye hooks as shown in the drawings. Anchor ropes shall be 3/8" nylon.

PART 3 – EXECUTION

For each of the three floating fountains shown on the Drawings:

- A. The Contractor shall construct two (2) "anchors" by filling 5-gallon white plastic buckets with concrete. A 3/8" stainless steel eye hook shall be cast in the top center of each bucket as shown in the drawings. All concrete work shall be done in accordance with Montana Public Works Standard Specifications - Division 3 – Concrete.
- B. The Contractor shall construct a floating fountain as shown in the Drawings. A hole shall be drilled in the center of a 16" diameter stainless steel plate and a 3/4"x1-1/4" coupling shall be welded into the hole. The 3/4" atomizing spray nozzle shall be inserted into the coupling. The steel plate should be centered atop the float with the 3/4" fitting pointing up.
- C. The 1-1/4" Flex Spa Hose shall be attached to the male coupling at the end of the discharge line and surface buried (3-4") to the edge of the pond. Care should be taken to avoid damaging the ponds' PVC liners. The hose shall be attached to the 1-1/4" coupling on the floating fountain and the float placed in the pond as shown in the Drawings. Enough slack shall be left in the hose to allow for some movement in the float when the water level is at maximum elevation and to allow the float to remain level. One end of a

3/8" Nylon rope shall be securely fastened to an anchor and the anchor dropped into the pond as shown in the Drawings. The other end of the rope shall be securely fastened through one of the holes on the float. Enough slack shall be left in the rope to allow some movement in the float when the water level is at maximum elevation. This process should be repeated with a second anchor.

1A. DESCRIPTION

PART 4 - MEASUREMENT AND PAYMENT - BID ITEM # 4

There is no measurement for payment for this item. This item will be paid for at the contract lump sum price bid, and will constitute full compensation for all equipment, tools and labor, including the performance of all works to provide incidentals necessary to complete this item.

PART 3-PRODUCTS

Payment will be made under the following: Install Floating Fountains in Ponds Lump Sum

Contractor shall furnish all equipment and materials needed to install the fountains and all tools, floats, and accessories as detailed in the drawings and shown by the Drawings.

PART 3-EXECUTION

A. There (7) working days before commencing this work, the Contractor shall notify the Owner, the Owner's Representative, and any other parties who have previously requested to be present.

B. The Contractor shall test all pumps and run them for a time sufficient to analyze the operation of the system. The performance of the electrical system, which shall include, but not be limited to, the following: The contractor shall be responsible for the proper installation of the pumps and valves. Each valve shall be tested at various water levels. The entire system should be evaluated for leaks, faults or malfunctioning equipment and any other faults or defects that may affect the performance of the system as part or as a whole.

C. Should any faults be detected by the Contractor, the Contractor shall provide all equipment, materials, and labor to fix the problem to the satisfaction of the Owner or the Owner's Representative.

PART 4-MEASUREMENT AND PAYMENT-BID ITEM #4

No measurement of this item will be made. This item will be paid for at the contract lump sum price bid and shall constitute full compensation for all equipment, tools and labor, including the performance of all works to provide incidentals necessary to complete this item.

Payment will be made under the following: System Start-Up and Testing Lump Sum.

SECTION 5.0 SPECIAL PROVISIONS SYSTEM START-UP AND TESTING - BID ITEM #5

PART 1-GENERAL

1.1 DESCRIPTION

This work shall consist of a thorough operational investigation of all pumps, electrical equipment, fittings, valves, nozzles, and other work completed by the Contractor to check for leaks, faulty or malfunctioning equipment and any other faults or defects that may affect the performance of the system in part or as a whole.

PART 2-PRODUCTS

Contractor shall furnish all equipment and materials needed to start the pumps and test all hoses, fittings, and appurtenances as described in this section and as shown on the Drawings.

PART 3-EXECUTION

- A. Three (3) working days before commencing this work, the Contractor shall notify the Owner, the Owner's Representative, and any other persons who have previously requested to be present.
- B. The Contractor shall start all pumps and run them for a time sufficient to analyze the operation of the system. The performance of the electrical safety switch and starter box shall be tested and evaluated. The valves and fittings in each valve box shall be inspected for leaks. Each valve shall be tested to assure satisfactory performance. The entire system should be evaluated for leaks, faulty or malfunctioning equipment and any other faults or defects that may affect the performance of the system in part or as a whole.
- C. Should any faults or defects be found, the Contractor shall provide all equipment, materials, and labor to fix the problem to the satisfaction of the Owner or the Owner's Representative.

PART 4-MEASUREMENT AND PAYMENT-BID ITEM, #5

No measurement of this item will be made. This item will be paid for at the contract lump sum price bid and shall constitute full compensation for all equipment, tools and labor, including the performance of all works to provide incidentals necessary to complete this item.

Payment will be made under the following: System Start-Up and Testing Lump Sum.

SECTION 6.0

TECHNICAL SPECIFICATIONS

BIDDERS are reminded that this Bid Package is only part of the Contract Documents for this project. The Technical Specifications listed in the Table of Contents on the following pages are included in the Contract Documents by reference and appear in the Montana Public Works Standard Specifications, Fourth Edition, January 1996 with Addendum #1, June 1998 available from the Montana CONTRACTORS' Association, Inc., 1717 11th Avenue, Helena, MT 59604 (phone: (406) 442-4162). The BIDDER is responsible for obtaining this information and by submitting a Bid, he is certifying that he had the full set of Contract Documents and submitted his Bid in accordance with the requirements of those documents.

SECTION 01100 - Construction Facilities and Temporary Controls
SECTION 01170 - Construction Traffic Control
SECTION 01700 - Contract Closure

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SECTION 01050 - Field Engineering	Existing Manholes, Lamp Posts, Inlets, Water Valve
SECTION 01070 - Metric International System	And Fire Hydrants To Grade
SECTION 01091 - References	Location Of Receiving Utility Poles, Street Signs And
SECTION 01300 - Submittals	Structures
SECTION 01400 - Contractor Quality Control and Owner Quality Assurance	
SECTION 01500 - Construction Facilities and Temporary Controls	
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SECTION 02250 -	Wearing

SECTION 02300 - PAVING AND SURFACING

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SECTION 02303 -	Hot Plant Mix Asphalt Concrete Base And Surface Course
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SECTION 02610B -	Sanitary Sewer Main Materials
SECTION 02610C -	Storm Drain Materials

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- SECTION 02112 - Removal Of Existing Pavement, Concrete, Curb, Sidewalk, Driveway And/Or Structures
- SECTION 02113 - Adjusting Existing Manholes, Lampholes, Inlets, Water Valve Boxes, Water Services And Fire Hydrants To Grade
- SECTION 02114 - Relocating Or Removing Utility Poles, Street Signs And Mailboxes
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- SECTION 02581 - Pavement Markings and Markers
- SECTION 02582 - Reflective Thermoplastic Pavement Markings

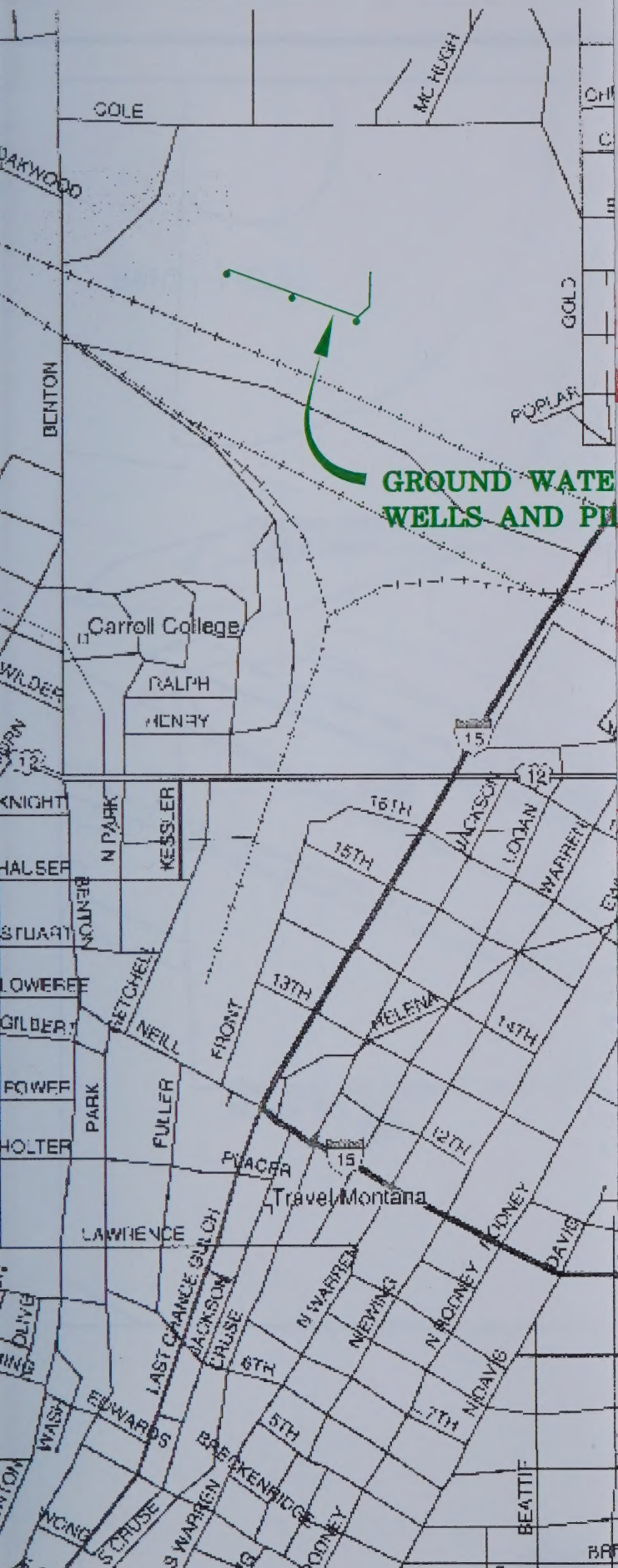
SECTION 02600 - PIPE MATERIALS

- SECTION 02610A - Water Mains
- SECTION 02610B - Sanitary Sewer Main Materials
- SECTION 02610C - Storm Drain Materials

LENA
TANA

EMEDIATION
9. 99-15

**SECTION 7.0
PROJECT DRAWINGS**



HELENA MONTANA

GROUND WATER WELLS AND PH EMEDIATION NO. 99-15

TITLE

BY MAP

OL VAULT DETAILS

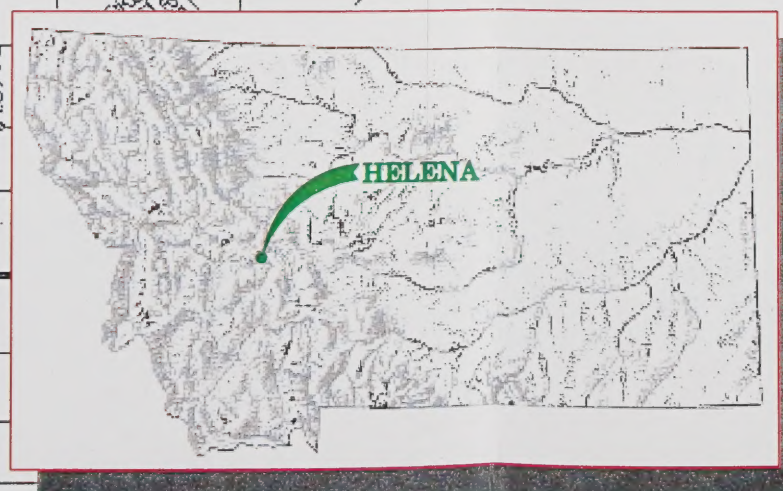
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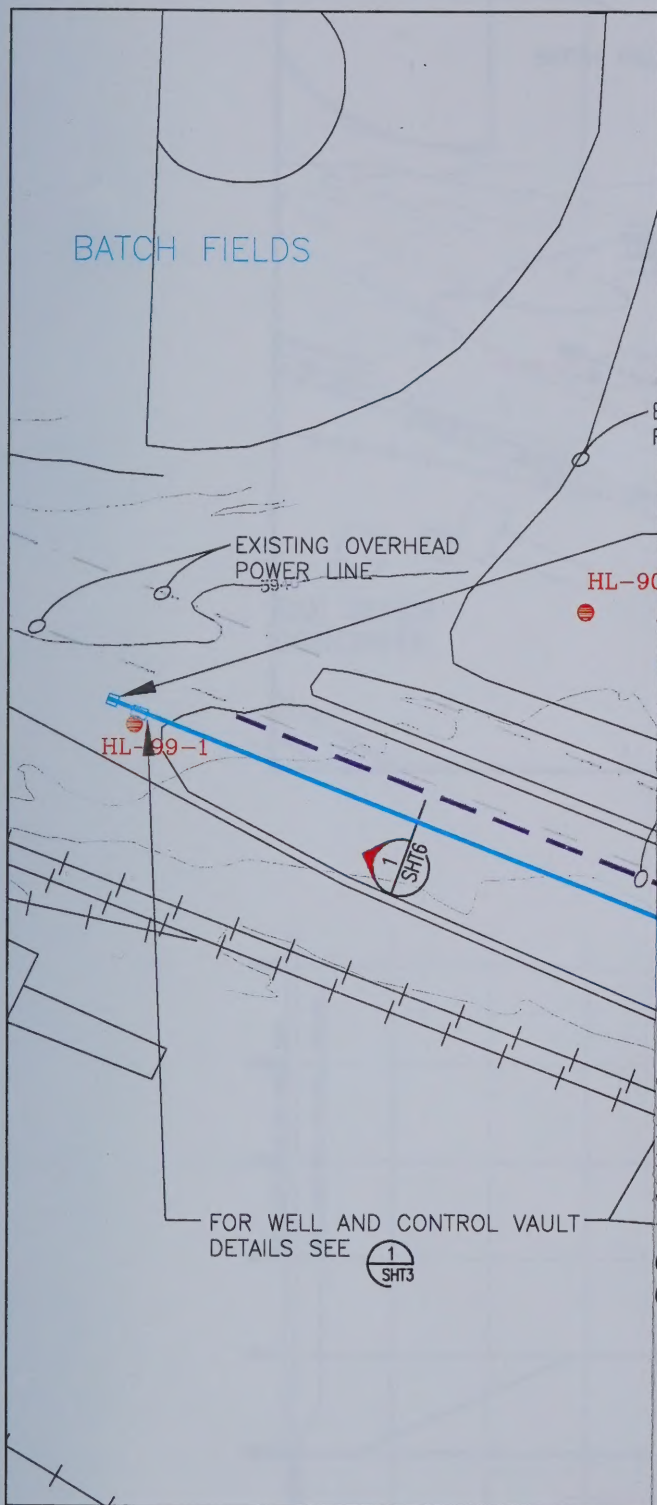
CITY OF HELENA
HELENA, MONTANA

GROUND WATER REMEDIATION PROJECT NO. 99-15

SHEET NO.	SHEET TITLE
1/6	COVER SHEET
2/6	PROJECT LOCATION MAP
3/6	PLAN AND PROFILE
4/6	WELL AND CONTROL VAULT DETAILS
5/6	DETAILS
6/6	DETAILS



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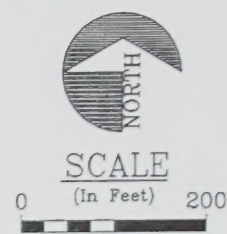
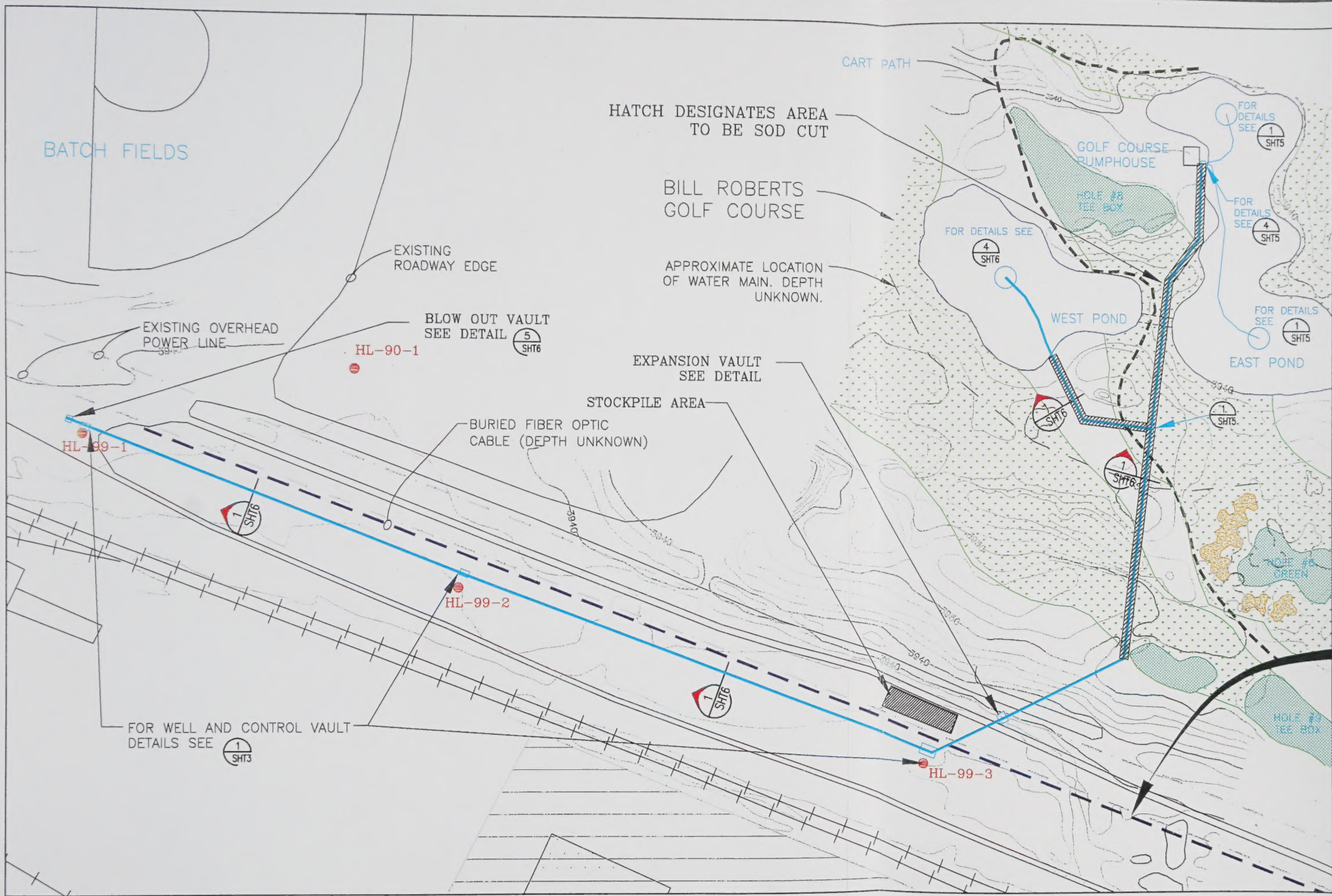
- PROPOSED TRENCH
- - - FIBER OPTIC LINE
- - - OVERHEAD POWER LINE
- - - GOLF CART PATH

THE CONTRACTOR SHALL LOCATE THE FIBER OPTIC CABLE PRIOR TO ANY EXCAVATION AS THERE IS THE POTENTIAL TO BE WITHIN 10 FEET OF THE CABLE AT ANY POINT BETWEEN WELLS HL-99-1 AND HL-99-3. POINT OF CONTACT FOR LOCATE IS BRUCE CHAFFIN AT SPRINT (406)443-6461.

SOURCE
1996 D WATER REMEDIATION
CITY OBJECT LOCATION MAP

SHEET

2/6



LEGEND

- PROPOSED TRENCH
- FIBER OPTIC LINE
- OVERHEAD POWER LINE
- GOLF CART PATH

THE CONTRACTOR SHALL LOCATE THE FIBER OPTIC CABLE PRIOR TO ANY EXCAVATION AS THERE IS THE POTENTIAL TO BE WITHIN 10 FEET OF THE CABLE AT ANY POINT BETWEEN WELLS HL-99-1 AND HL-99-3. POINT OF CONTACT FOR LOCATE IS BRUCE CHAFFIN AT SPRINT (406)443-6461.

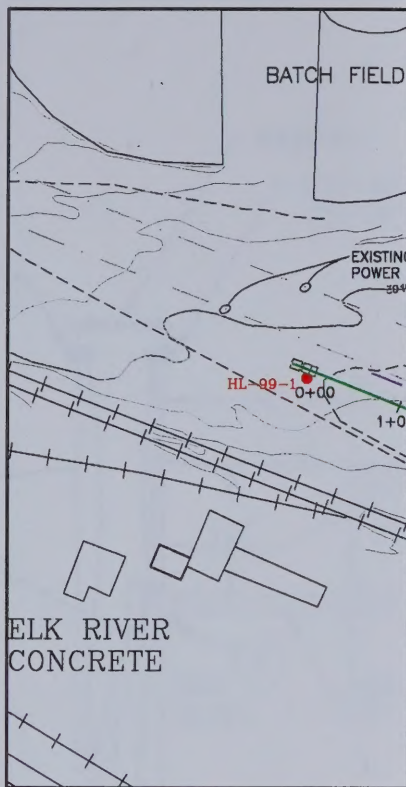
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CITY OF HELENA ENGINEERING DEPT.

PROJECT NO.:	027/0054/504.100
DRAWN BY:	DRT 9/3/99
CHECKED BY:	JB
APPROVED BY:	MRW
SCALE:	AS NOTED

CITY OF HELENA
GROUND WATER REMEDIATION
PROJECT NO. 99-15

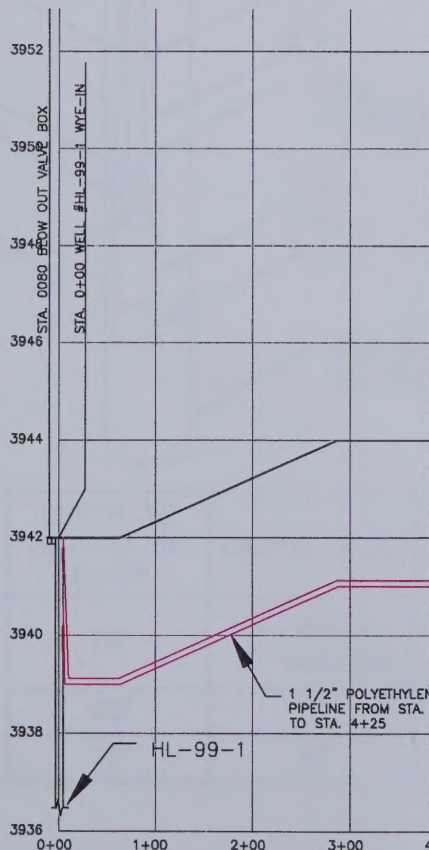
GROUND WATER REMEDIATION
PROJECT LOCATION MAP

SHEET
2/6



LEGEND

- 1 1/2" BLACK POLYETHYLENE PIPE
- 2" BLACK POLYETHYLENE PIPE
- 3" BLACK POLYETHYLENE PIPE
- BURIED FIBER OPTIC LINE
- OVERHEAD POWER LINE
- WATER MAIN (APPROXIMATE LOCATION)



NOTES:

THE CONTRACTOR SHALL LOCATE THE FIBER OPTIC CABLE PRIOR TO ANY EXCAVATION AS THERE IS THE POTENTIAL TO BE WITHIN 10 FEET OF THE CABLE AT ANY POINT BETWEEN WELLS HL-99-1 AND HL-99-3. THE POINT OF CONTACT FOR LOCATE IS BRUCE CHAFFIN AT PHONE (406) 443-6461.

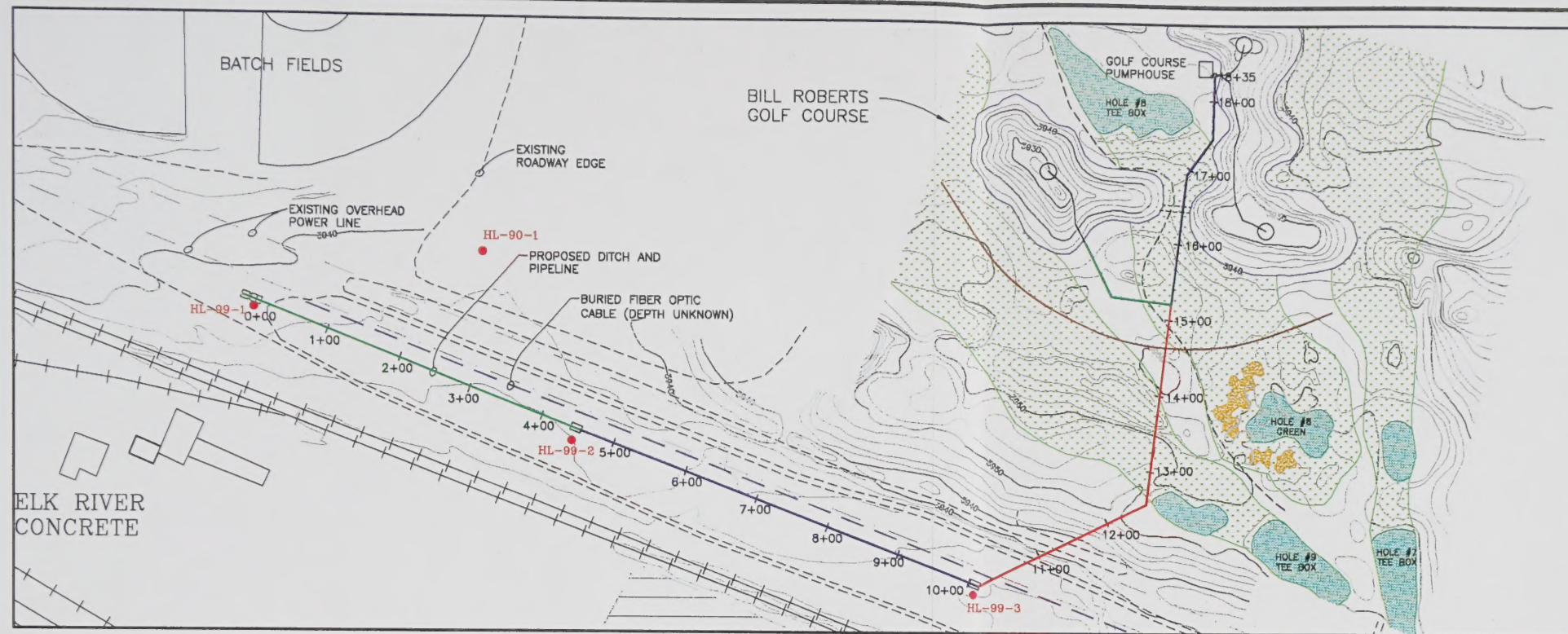
THE LIKE SIZE OF POLYETHYLENE PIPE SHALL BE JOINED TOGETHER USING BRASS INSERT x BRASS INSERT ADAPTERS.

SOD SHALL BE CUT FROM APPROXIMATELY STA. 0+6.63 TO STA. 18+35 AND THEN FROM THE PUMP HOUSE DOWN TO THE WATERS EDGE. SOD SHALL ALSO BE CUT FROM THE WYE IN THE MAIN LINE TO THE EDGE OF THE WEST POND.

**GROUND WATER REMEDIATION
PLAN AND PROFILE**

SHEET

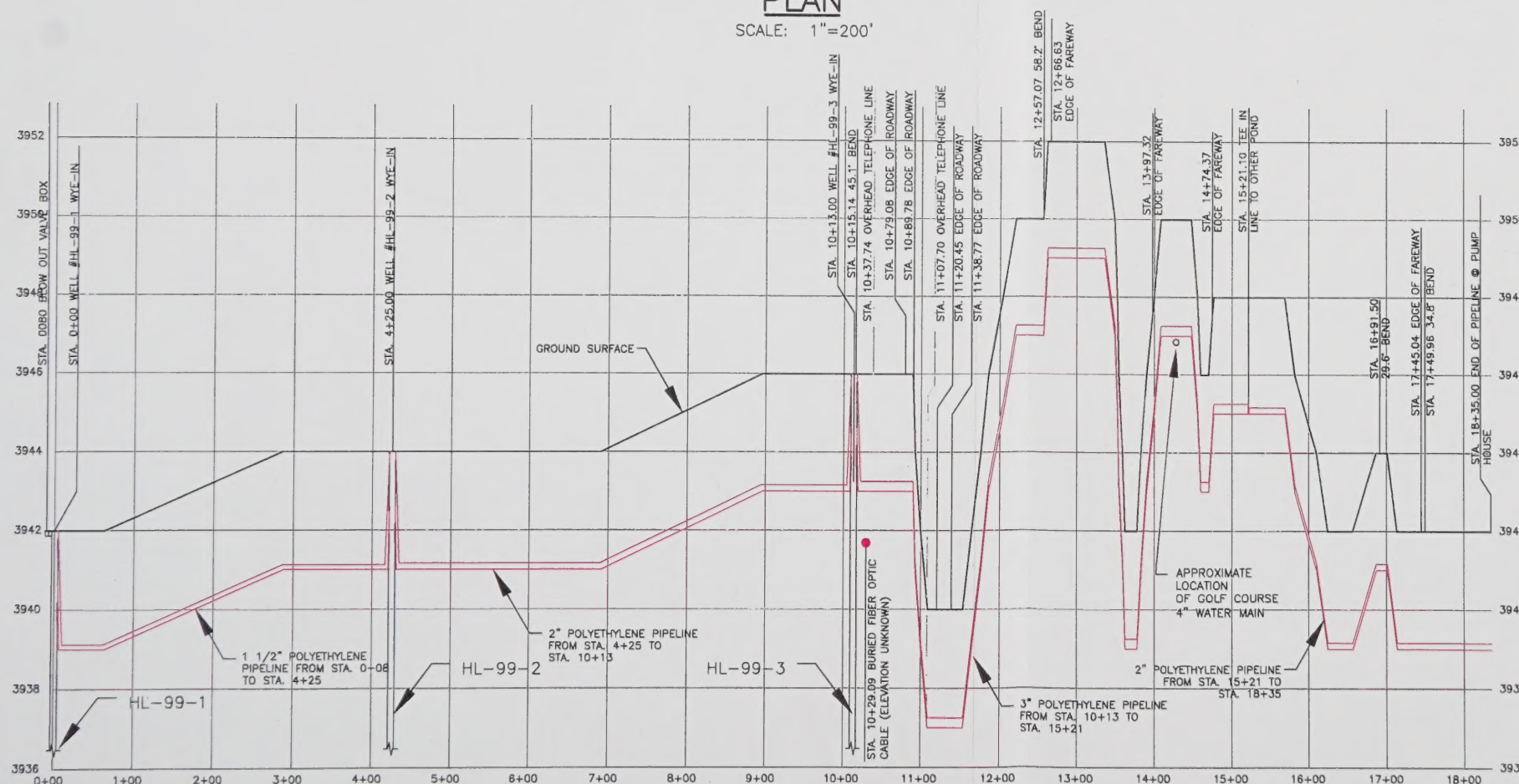
3/6



LEGEND

- 1 1/2" BLACK POLYETHYLENE PIPE
- 2" BLACK POLYETHYLENE PIPE
- 3" BLACK POLYETHYLENE PIPE
- BURIED FIBER OPTIC LINE
- OVERHEAD POWER LINE
- WATER MAIN (APPROXIMATE LOCATION)

PLAN
SCALE: 1" = 200'



PROFILE

VERTICAL SCALE: 1" = 4'
HORIZONTAL SCALE: 1" = 200'

PROJECT NO.:	027/0054/504.100
DRAWN BY:	DRT 9/2/99
CHECKED BY:	JB 9/8/99
APPROVED BY:	MRW 9/10/99
SCALE:	AS NOTED

CITY OF HELENA
GROUNDWATER REMEDIATION
PROJECT NO. 99-15

HELENA GROUND WATER REMEDIATION
PLAN AND PROFILE

SHEET

3/6

DN

/60HZ/460VAC MOTOR

EXISTING L
EYE SCRUNDFOS MODEL 40550-15PE
CUT WIDEL 40550-12PE

ALVE.
4.

MIP ADAPTER. CONFORM TO
-1784. USE WITH HOSE CLAMPS.

TH GROUND.

ETHYLENE PIPE NSFA.

ON

PACITY.

5-40 GPM CAPACITY
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ED.
640APC.

ON

HOSE BIBB
-14

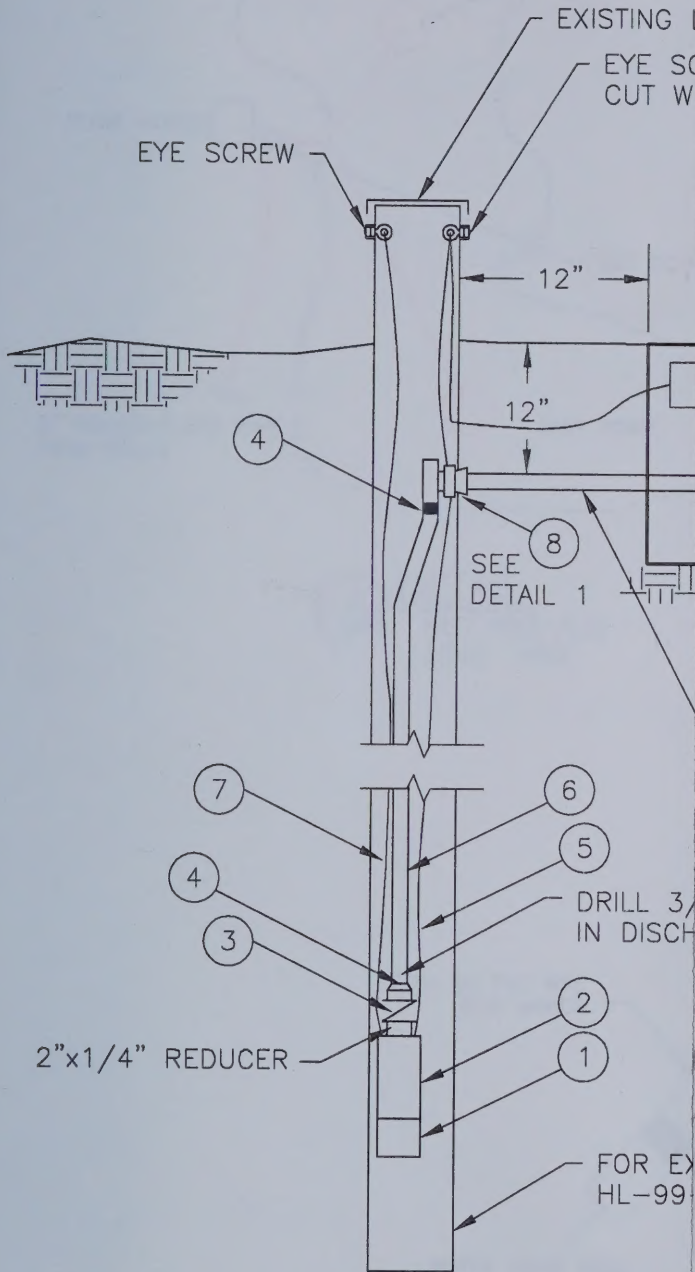
VALVE. CONFORM TO ASTM B-584

FOR EX
HL-99 ELBOW

E

SIZE VARIES

OW, NON-FUSIBLE SAFETY SWITCH.
HP RATING WITH NEMA 1
OCK #HU361
5HP; NEMA SIZE 0, OVERLOAD
OV COIL WITH NEMA 1
PART NO. 14CSD32BC

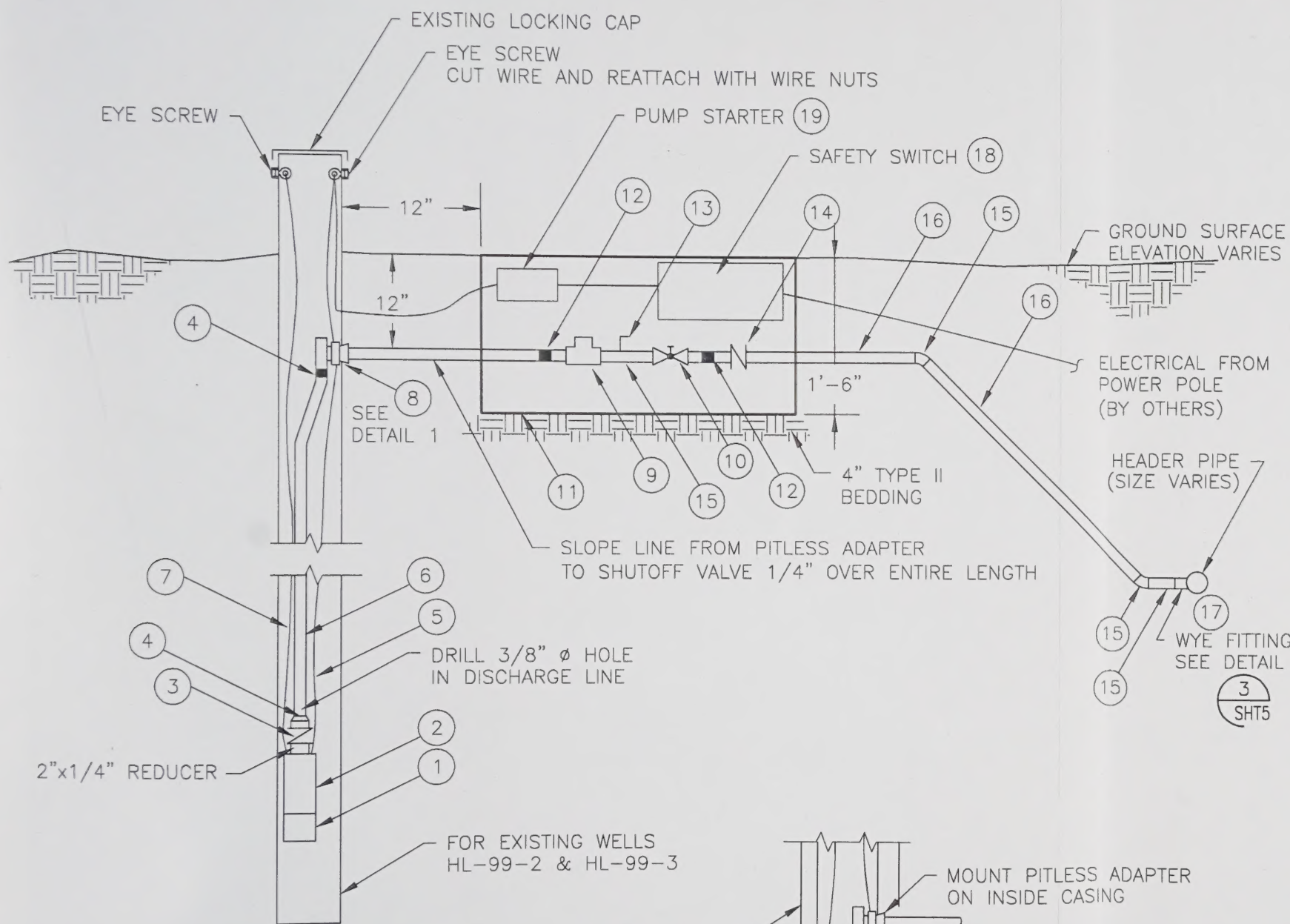


WELL NO.	DEPTH TO BOTTOM OF PUMP	CASING SIZE
HL-99-1	70'	5" INSIDE 8" OUTSIDE
HL-99-2	90'	6"
HL-99-3	70'	8"

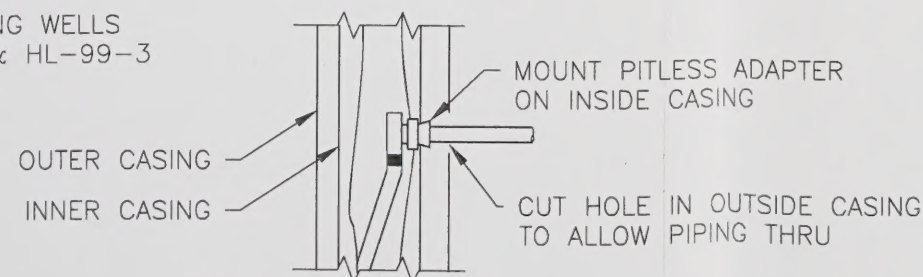
WATER REMEDIATION
AND CONTROL VAULT
DETAILS

SHEET

4/6



WELL NO.	DEPTH TO BOTTOM OF PUMP	CASING SIZE
HL-99-1	70'	5" INSIDE 8" OUTSIDE
HL-99-2	90'	6"
HL-99-3	70'	8"



1
-
DETAIL
DOUBLE WELL CASING
HL-99-1

ITEM DESCRIPTION

- 1 FRANKLIN G10975 5HP 3Ø/60HZ/460VAC MOTOR
- 2 HL-99-1 & HL-99-2: GRUNDFOS MODEL 40550-15PE
HL-99-3: GRUNDFOS MODEL 40550-12PE
- 3 1 1/4" BRONZE CHECK VALVE. CONFORM TO ASTM B-584.
- 4 1 1/4" BRASS INSERT x MIP ADAPTER. CONFORM TO ASTM D-2609 & ASTM D-1784. USE WITH HOSE CLAMPS.
- 5 12/3 FLAT SUB-CABLE WITH GROUND.
- 6 160# SDR-9 BLACK POLYETHYLENE PIPE NSFA. MEETS ASTM-2239.
- 7 SAFETY ROPE. 3/8" NYLON
- 8 BRASS PITLESS ADAPTER, MIN. 2000 LB. WEIGHT CAPACITY.
- 9 HORIZONTAL FLOW METER; 5-40 GPM CAPACITY BLUE-WHITE MODEL #F-30100.
- 10 1 1/4" SCH. 80 PVC BALL VALVE
- 11 17"x30"x18" POLYMER SPLICE BOX WITH MOUSE HOLES. 20,000 LB "TRAFFIC" RATED. ARMORCAST MODEL A6001640APC.
- 12 1 1/4" SCH. 80 PVC UNION
- 13 1/2" BRONZE STANDARD HOSE BIBB GRAINGER STOCK NO. 5E414
- 14 1 1/4" BRONZE CHECK VALVE. CONFORM TO ASTM B-584.
- 15 1 1/4" SCH. 80 PVC 45° ELBOW
- 16 1 1/4" SCH. 80 PVC PIPE
- 17 SCH. 80 PVC WYE FITTING. SIZE VARIES
- 18 HEAVY DUTY, SINGLE-THROW, NON-FUSIBLE SAFETY SWITCH. 480V, 3Ø, MIN 20 AMP/5HP RATING WITH NEMA 1 ENCLOSURE GRAINGER STOCK #HU361
- 19 MAGNETIC STARTER. 406V, 5HP; NEMA SIZE 0, OVERLOAD RANGE 2.5-10 AMPS, 460V COIL WITH NEMA 1 ENCLOSURE. PUMPS, INC. PART NO. 14CSD32BC

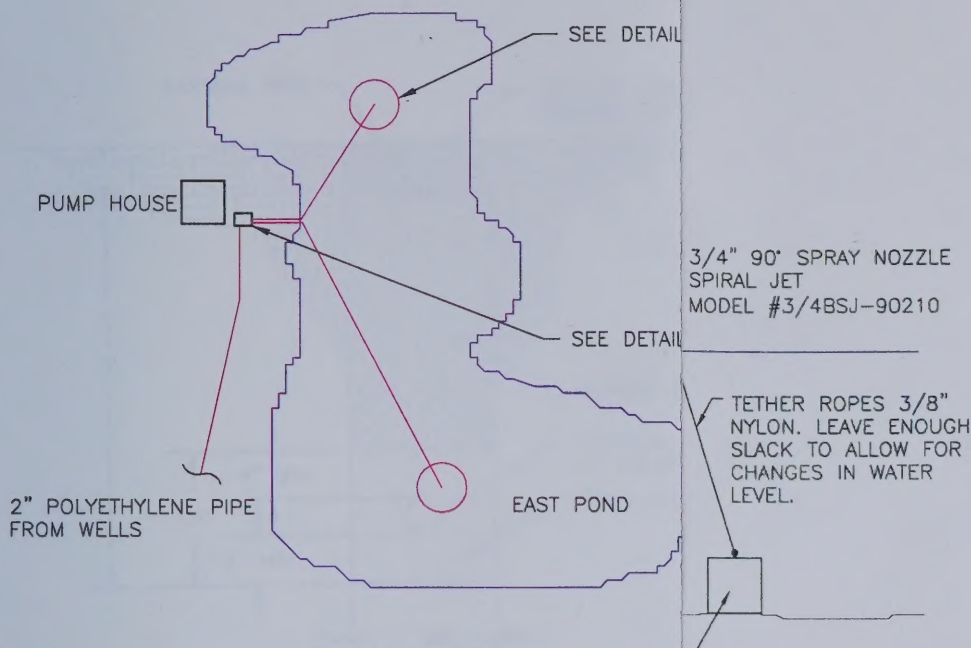
PROJECT NO.: 027/0054/504.100
 DRAWN BY: DRT 9/2/99
 CHECKED BY: JB 9/8/99
 APPROVED BY: MRW 9/10/99
 SCALE: NONE

CITY OF HELENA
 GROUND WATER REMEDIATION
 PROJECT NO. 99-15

GROUND WATER REMEDIATION
 WELL AND CONTROL VAULT
 DETAILS

SHEET

4/6



1 DETAIL
SHT2 EAST POND PLAN
SCALE: NONE

SCH. 80 PVC WYE
SIZE VARIES

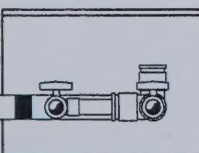
N BALL VALVE

ER SPLICE BOX WITH MOUSE HOLES
LB. ARMORCAST MODEL #6001423A

WATER FROM WELL

DIRECT

3
SHT4

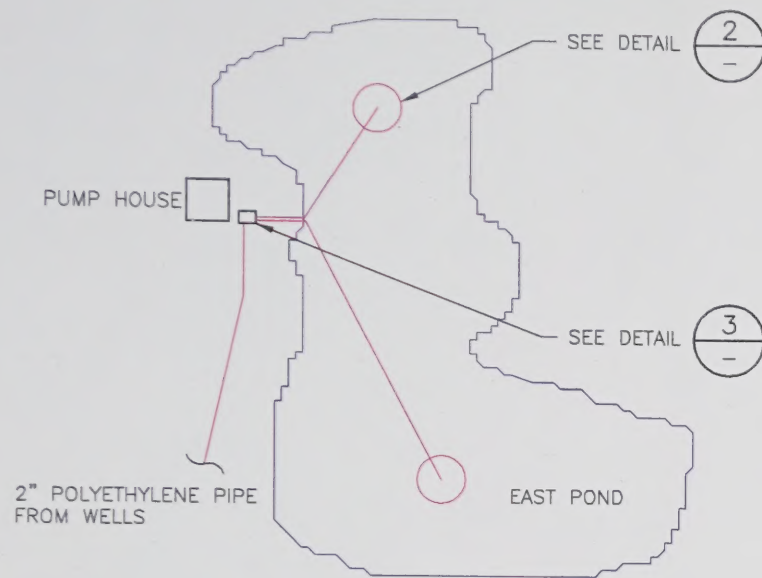


B SECTION

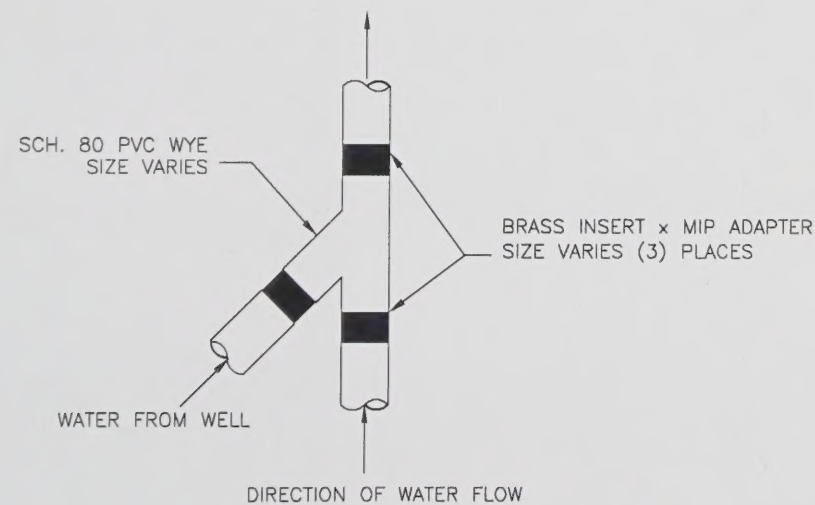
WATER REMEDIATION
DETAILS

SHEET

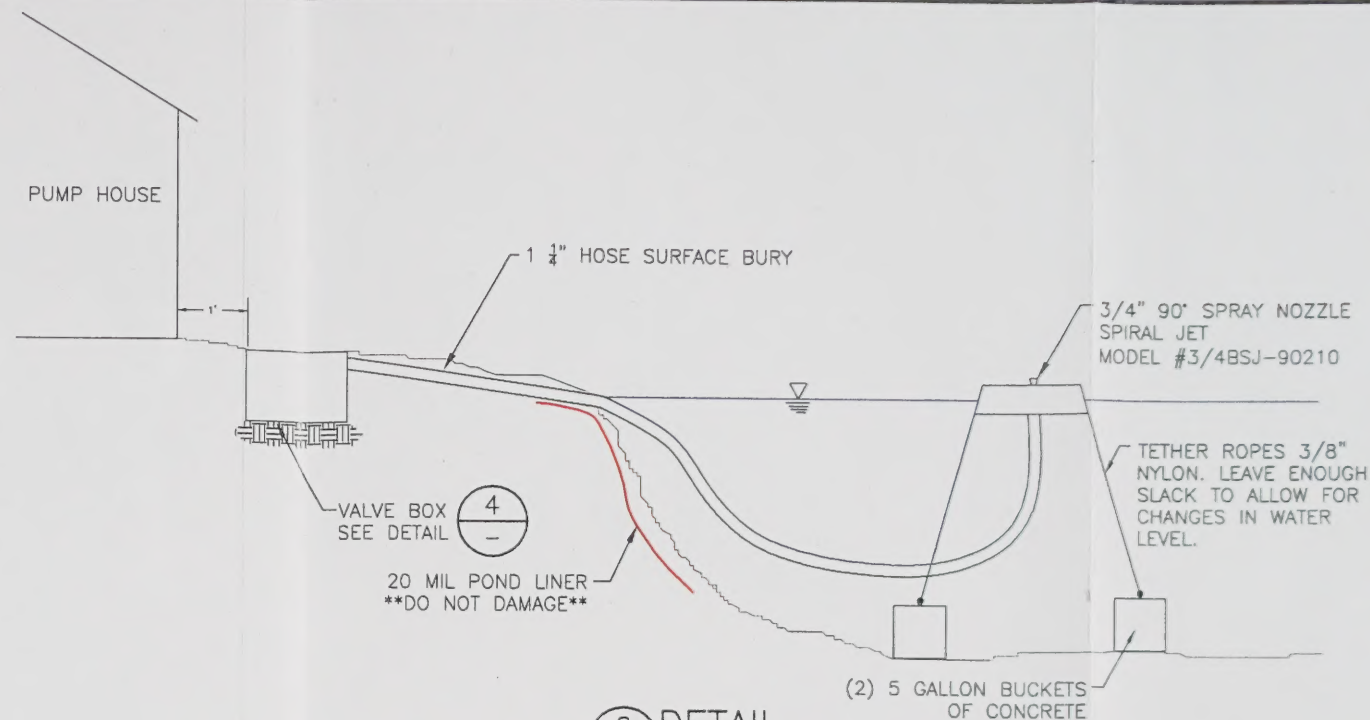
5/6



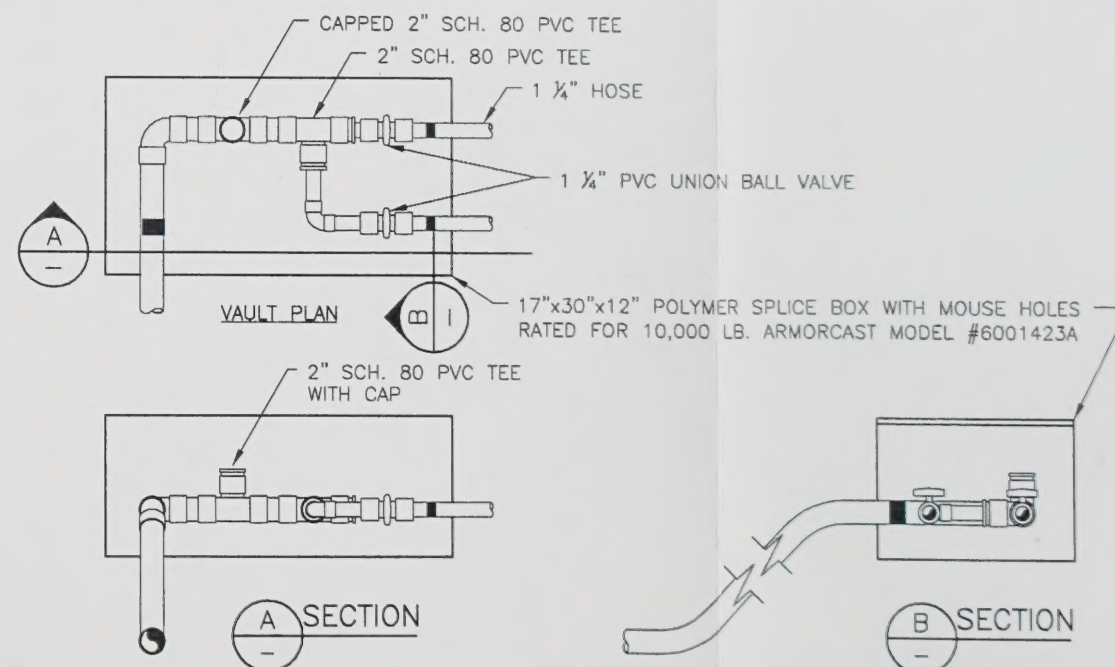
1 DETAIL
SHT2 EAST POND PLAN
SCALE: NONE



3 DETAIL
SHT4 WELL TIE-IN WYE CONNECTION
SCALE: NONE



2 DETAIL
POND SECTION AND ANCHOR
SCALE: NONE



4 DETAIL
VALVE BOX
SCALE: 3/4"=1'-0"

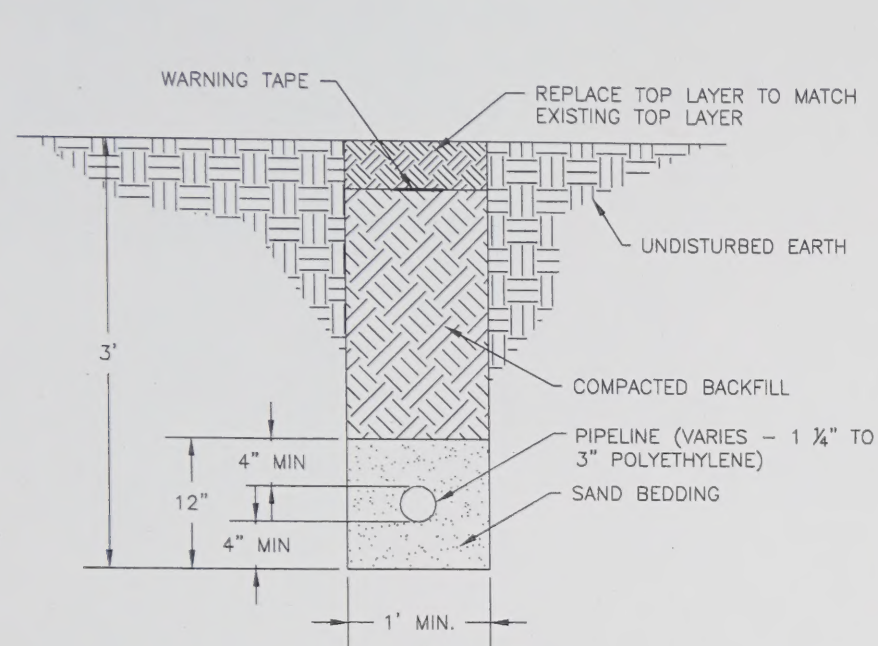
PROJECT NO.:	027/0054/504.100
DRAWN BY:	DRT 9/3/99
CHECKED BY:	JB
APPROVED BY:	MRW
SCALE:	AS NOTED

CITY OF HELENA
GROUND WATER REMEDIATION
PROJECT NO. 99-15

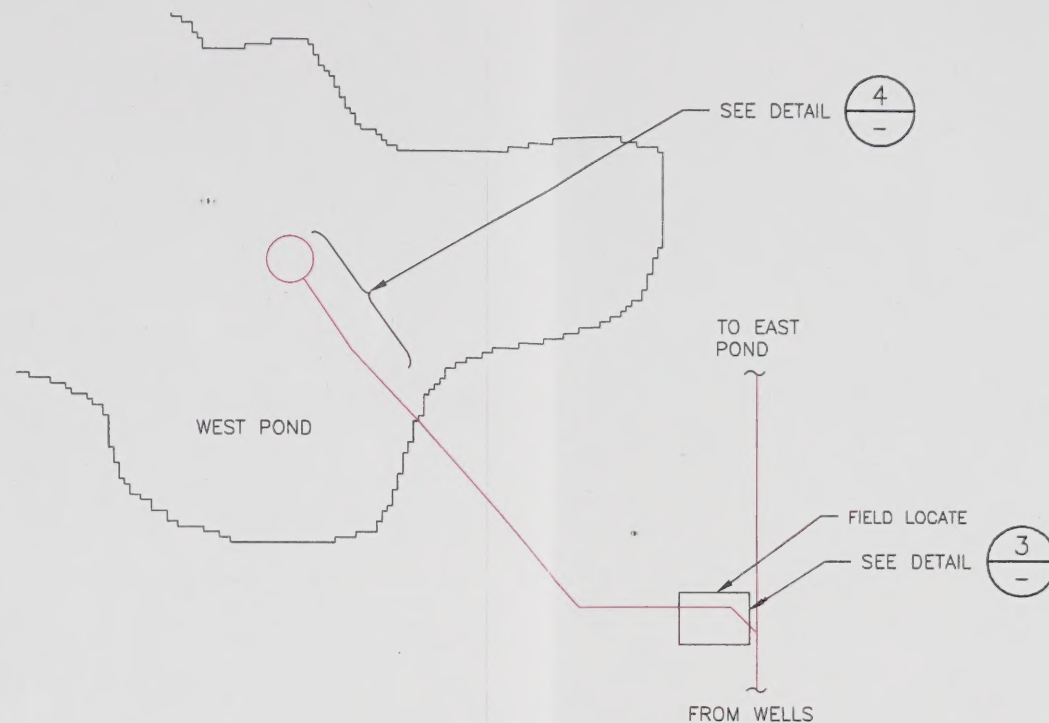
GROUND WATER REMEDIATION
DETAILS

SHEET

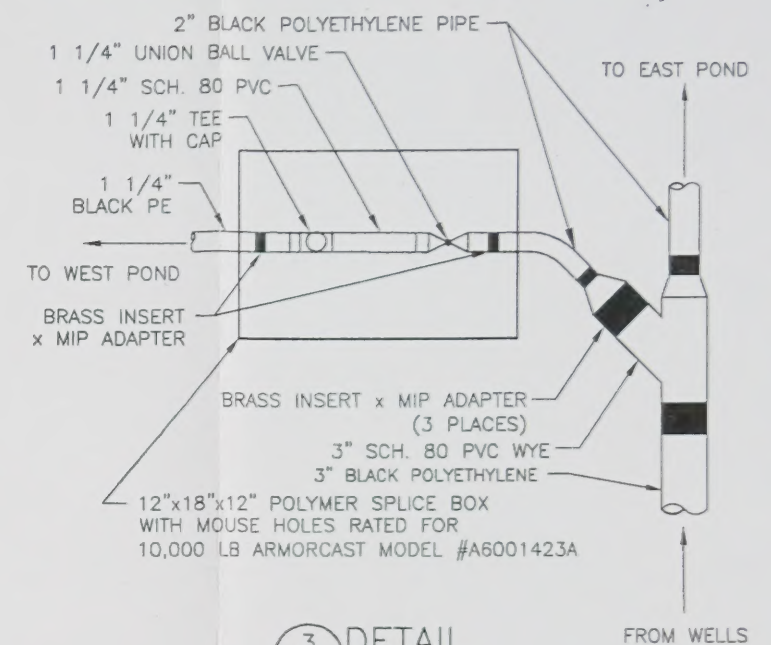
5/6



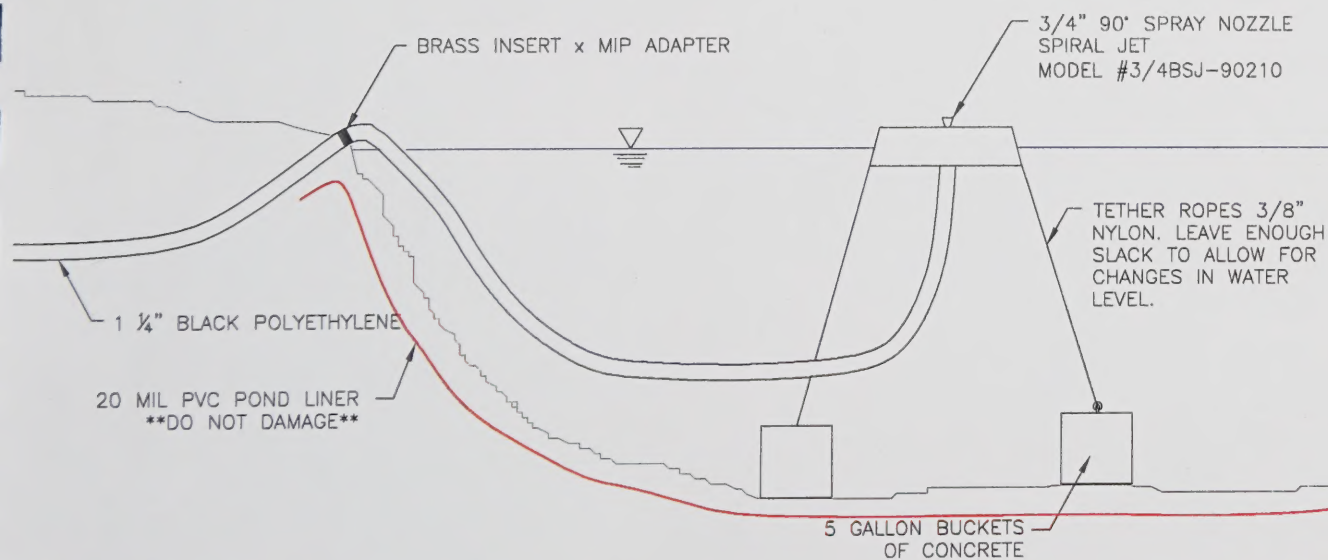
1 DETAIL
SHT2 TYPICAL TRENCH SECTION
SCALE: 3/4"=1'-0"



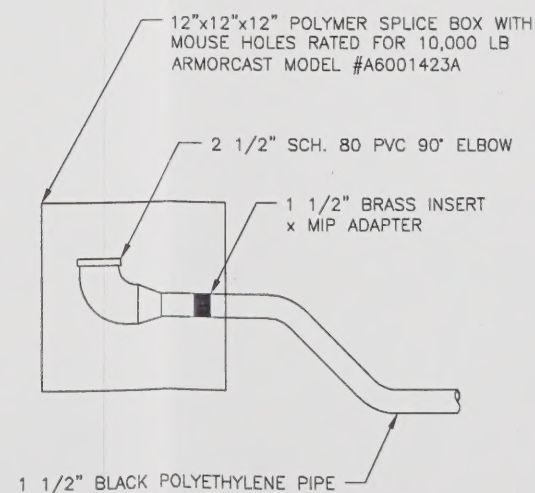
2 DETAIL
SHT2 WEST POND PIPELINE
SCALE: NONE



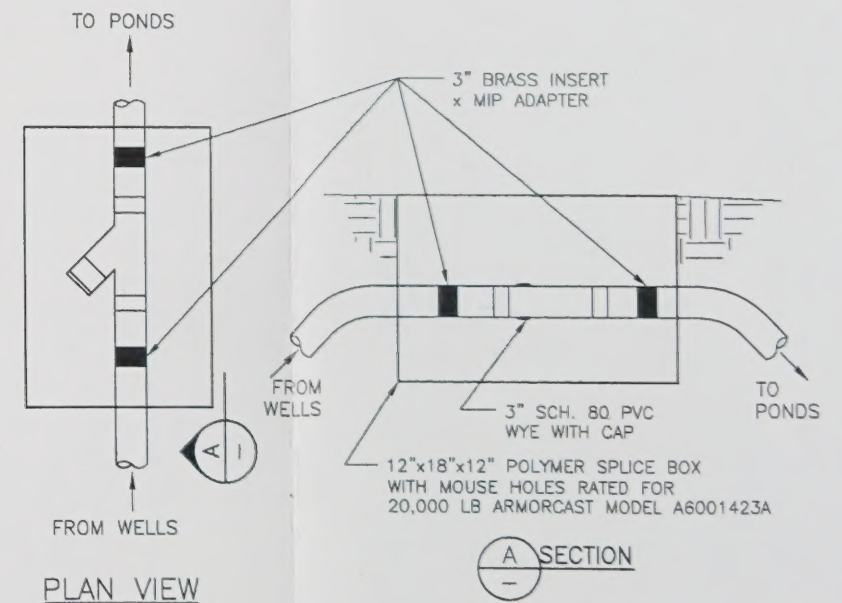
3 DETAIL
VALVE BOX
SCALE: 1'=1'-0"



4 DETAIL
TYPICAL ANCHOR
SCALE: NONE



5 DETAIL
BLOW OUT VALVE BOX
SCALE: 1'=1'-0"



6 DETAIL
FUTURE EXPANSION VALVE BOX
SCALE: 1'=1'-0"

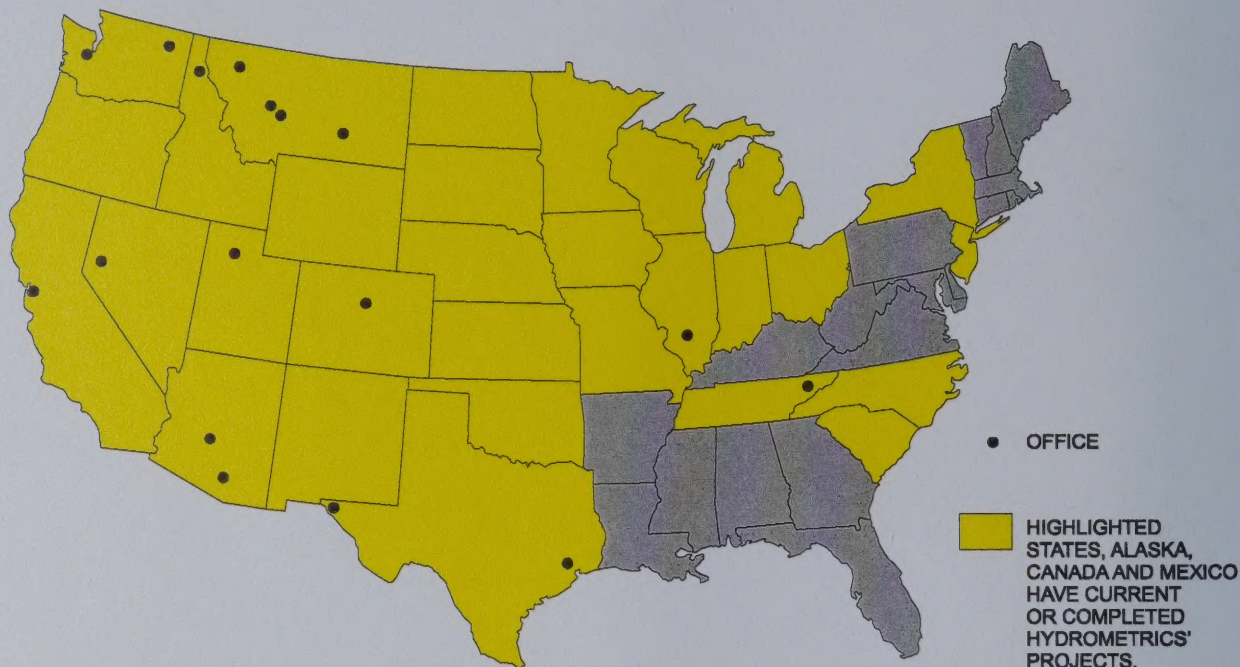
PROJECT NO.:	027/0054/504.100
DRAWN BY:	DRT 9/3/99
CHECKED BY:	JB
APPROVED BY:	MRW
SCALE:	AS NOTED

CITY OF HELENA
GROUND WATER REMEDIATION
PROJECT NO. 99-15

GROUND WATER REMEDIATION
DETAILS

SHEET

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Billings, MT 59106
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